

## SENSOR ACQUISITION

- Data recording without programming
- Fast measurement with high data volumes
- Acquisition close to the measuring point
- Distributed data acquisition and control in real time

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SPIRIT OF EXCELLENCE

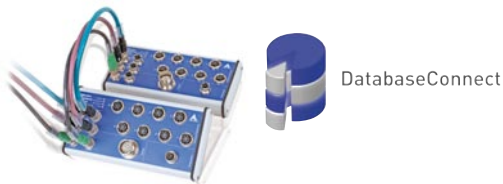
## Data recording without programming



### MSX-ilog

- Recording of many signal types
- Different versions: up to IP 67, -40 °C/+85 °C
- Visualisation: Live/recorded data
- Different start/stop trigger possibilities, pre-trigger
- Alarm and export functions
- Conversion of raw data into physical values
- Fast commissioning
- Can be used as a stand-alone system
- Ethernet-based solutions

## Acquisition close to the measuring point



### MSX-E-SYSTEMS

- Direct connection to various types of sensors
- Up to IP 67, -40 °C/+85 °C
- Robust metal housings
- Numerous channels: can be cascaded and synchronised with one another
- Calculation and conversion of measuring values
- Easy PLC connection
- Export in databases without programming knowledge
- Stand-alone operating possible
- Ethernet-based

## Fast measurements with high data volumes



### PC BOARDS WITH IPC

- For various types of sensors
- Designed for industrial use
- PCI Express, PCI, CompactPCI, PC104-PLUS
- Optical isolation, filters
- Protection against short-circuits, overtemperature and overvoltage
- Dedicated accessories: D-Sub cables, screw terminal panel
- Large range of free drivers

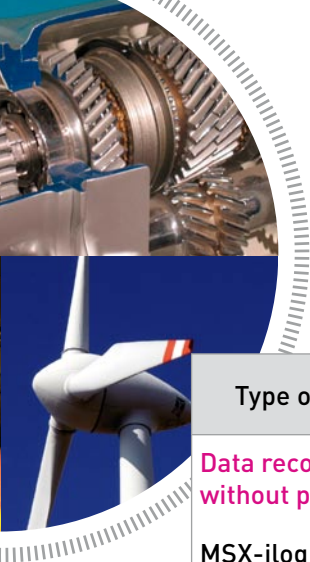
## Distributed data acquisition and control in real time



### PAC SYSTEMS WITH PC-BOARDS

- Types of sensors depending on the measurement board
- Versions for PCI and CompactPCI
- PCI boards or CompactPCI boards from other producers can be used
- Field bus interfaces: CAN, Profibus
- For real-time applications
- Extensive adaptations of your measuring system possible
- With free development tools
- Open Source operating system: no update obligations





## CHOOSE THE INTERFERENCE-FREE SOLUTION WHICH FITS YOUR APPLICATION BEST.

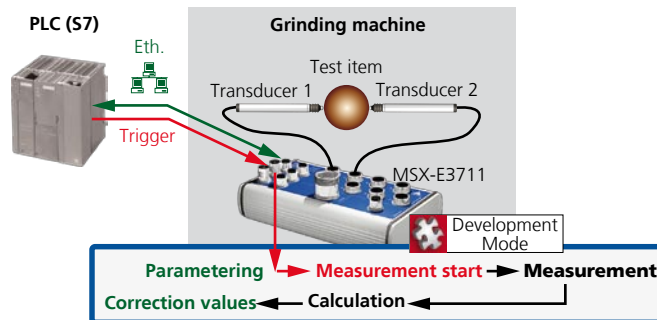
Type of application	Function	Product	Number of channels	Types of sensors
<b>Data recording without programming</b> <b>MSX-ilog</b>	Data logger	MSX-ilog	Depending on the application	Transducers, ICP, SSI, incremental, thermocouples, RTD, DMS, 0-10 V, $\pm 10$ V 0(4)-20 mA, dig. I/O
<b>Acquisition close to the measuring point</b> <b>MSX-E-systems for distributed measuring applications</b>	Voltage/current	MSX-E3011 MSX-E3021 MSX-E3027	16 diff. inputs, 16-bit	Contact-free sensors (e. g. laser sensors), analog sensors 0-10 V, $\pm 10$ V, 0(4)-20 mA
	Voltage/current	MSX-E3121	6 diff. inputs, 24-bit, 4 outputs, 16-bit 32 dig. I/O, 24 V	Contact-free sensors (e. g. laser sensors), analog sensors, digital signals 0-10 V, $\pm 10$ V, 0(4)-20 mA
	Temperature measurement	MSX-E3211	16/8 diff. inputs, 24-bit	Thermocouples, RTD
	Strain gauges/pressure	MSX-E3311	16/8 diff. inputs, 24-bit	Strain gauges
	Acquisition of dynamic signals	MSX-E3601	8 SE/diff. inputs, 24-bit	ICP sensors, $\pm 10$ V, $\pm 0.05$ V
	Length measurement	MSX-E370x	4, 8, 16 24-bit	LVDT, Half-Bridge, Knäbel VLDT (Mahr)
	Length measurement	MSX-E3711	8 (simultaneous), 24-bit	LVDT, Half-Bridge, Knäbel VLDT (Mahr)
	Counter	MSX-E17x1	4	SSI, incr. encoders, digital transducers, sin/cos, EnDat 2.2, BiSS-C
	Serial signals	MSX-E7511	4 serial interfaces	RS232, RS422, RS485, TTY
<b>Distributed data acquisition and control in real time</b> <b>PAC-systems with PC-boards</b>	Depending on the measurement boards	MSX-Box	16 to 96	Depending on the measurement boards
<b>Fast measurement with high data volumes</b> <b>PC-boards with IPC</b>	Voltage/current	APCIe-3121 xPCI-3120	16 SE / 8 diff. 16-bit	0-10 V, $\pm 10$ V 0(4)-20 mA
	Temperature measurement	APCI-3200	16 thermo./ 8 RTD, 18-bit	Thermocouples RTD
	Strain gauges/pressure	APCI-3300	8/4, 18-bit	Strain gauges
	Length measurement	APCI-3701	16, 16-bit	LVDT, Half-Bridge
	Length measurement	APCI-3702	5 (simultaneous), 16-bit	LVDT, Half-Bridge
	Serial signals	APCIe-7xxx APCI-7xxx-3	1 to 8 serial interfaces	RS232, RS422, RS485, TTY
	Multifunction counter board	APCIe-1711 xPCI-1710	Depending on the type of signal	SSI, incr. encoders, BiSS-C, EnDat 2.2, etc.



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## PRACTICAL EXAMPLE

### Application example: Quality control of balls for ball-bearings



#### Challenge:

On a grinding machine balls for ball-bearings are ground. After the grinding process the balls are to be measured directly on site and evaluated. Possible correction values for the production process are to be transferred directly to the PLC which controls the grinding machine. For this purpose a very robust measurement technology is required as the measurement is effected on the production site. The application controls whether the dimensions of the balls lie within predefined parameters or not. If not, the PLC is to initiate the necessary corrections.

#### Solution:

For this task the robust MSX-E3701 system is used with a development mode application, in which two sensors acquire and measure the balls. The measured values are calculated and compared to the predefined parameters of the PLC. With this predefined values it is possible to check if the balls have the correct size or if it is necessary to regrind them. The result of the calculation and the measured values are transferred to the PLC which controls the grinding machine. The PLC can then readjust the grinding process. The capacity to calculate values onboard relieves the PLC, accelerates production cycles and achieves significant improvements in quality.

## Sensor acquisition with solutions by ADDI-DATA



Rough industrial environment calls for special requirements.

This is why we have specialised in offering solutions which meet these high requirements optimally. ADDI-DATA stands for quality, reliability, long-term availability and service.

#### Bespoke solutions

In sensor acquisition applications, standard components are normally used. But there are some requirements which cannot be satisfied with standard components.

If in-house implementation is impossible, you will need a reliable partner who can offer you the precise solution as part of his service. Just ask us! We will be glad to help you, from the most minor adaptation to new product development.



#### Advice needed?

Then just call us at

Tel: +49 7229 1847-120

or send an e-mail to: [info@addi-data.com](mailto:info@addi-data.com).