

ZAT

10 YEARS  
GUARANTEE



# SandRA Z200 CONTROL STATION



## NEW FAMILY OF ZAT CONTROL STATIONS IS DESIGNATED **SandRA**

ZAT a.s. is traditional supplier of complex solutions for technological processes automation. The company intends its supplies mainly for industrial branches, which require robust, reliable designs such as classic and nuclear power generation, mining and transportation of minerals, gas industry etc. These are branches requiring new modern solutions of control systems for its technologies as well as solutions, which are perspective on a long-term basis with a life-cycle comparable with the controlled technology life-cycle. These contradictory requirements can be met only by control systems with open architecture, making gradual innovations and modernization possible. ZAT-Plant Suite control system belongs to such systems. Significant innovative step in development of this system represents new SandRA control systems family. The name of the family consists of initial letters of the keynote Safe and Reliable Automation. This keynote is a basic motto for development and application of ZAT automation tools. During development of the new generation longstanding experience in development and operation of ZAT control systems were applied. Owing to their performance and system openness, Z200 series control stations are determined for general use in control systems mostly in power generation industry, but also in other branches.



### **SandRA Z200** – BASIC CHARACTERISTICS

Stations of Z200 series are designed as modular. It means that characteristics of the particular control station (e.g. number of input and output signals, their type and range, types and numbers of communication channels, supply voltage, computing output etc.) depend on the station configuration. It implies that it is possible to change and develop these characteristics to a certain extent also in the future through development of new types of modules (boards). However, the below mentioned characteristics are common and determining for all components of Z200 series, ensuring their compatibility, and therefore they are constant. Thus, their selection is entirely essential.

- **Mechanical layout** - Robust metallic mechanics. Standard 19" rack with plugboards in design, ensuring resistance against electromagnetic interference. Standardized connection of I/O signals and possibility to insert special modules for conditioning in the rack rear space

- **Internal bus** - High-speed (1,25 Gb/s) serial bus of RapidIO standard in the layout „double star“ ensures connection of boards inserted in the rack. Double bus is implemented in the form of „backplane“, which doesn't contain any active elements, whereby it increases its resistance against failure even more

- **Power supply** - Individual boards are powered by direct current voltage 24V. It is possible to equip the rack with two power supply units, which can operate as redundant. In this case power is supplied by two independent systems up to the separate plugboards level. At the same time within the frame of standardized connection of 10 signals it is possible to use external connection of outer connections (sensors, contacts)

- **Redundancy** - It is possible to select all key components of the station as redundant. That means double internal data bus, mounting of two control boards (CPU) in the redundant mode, double distribution of supply voltage and mounting of two power sources



- **Function Live Insertion** - All plugboards of Z200 series (I/O boards, CPU, communication boards, power supply units) enable to replace the boards during operation of the control station (in case of CPU and power supply units redundant configuration is essential)

- **Galvanic isolation** - in all plugboards galvanic isolation of input circuits and communication lines from internal logics circuits is thoroughly observed and power supply of most I/O boards has individual channels galvanically isolated from each other

## SET OF BASIC COMPONENTS OF **SandRA Z200** SERIES STATION

Main component of **SandRA Z200** control station on the one hand „Rack“ (it exists in two designs for 10 and 21 plugboards) – and on the other hand the set of plugboards. Basic groups of plugboards with the most important parameters are stated below.

- **Control board (CPU)** - high computing performance (800 MIPS @450MHz), 2x Ethernet, 2x serial interface RS232/422/485, 1 x USB

- **Power supply units** - input voltage 24VDC or 48VDC, output 200W, design with internal diagnostics or without diagnostics

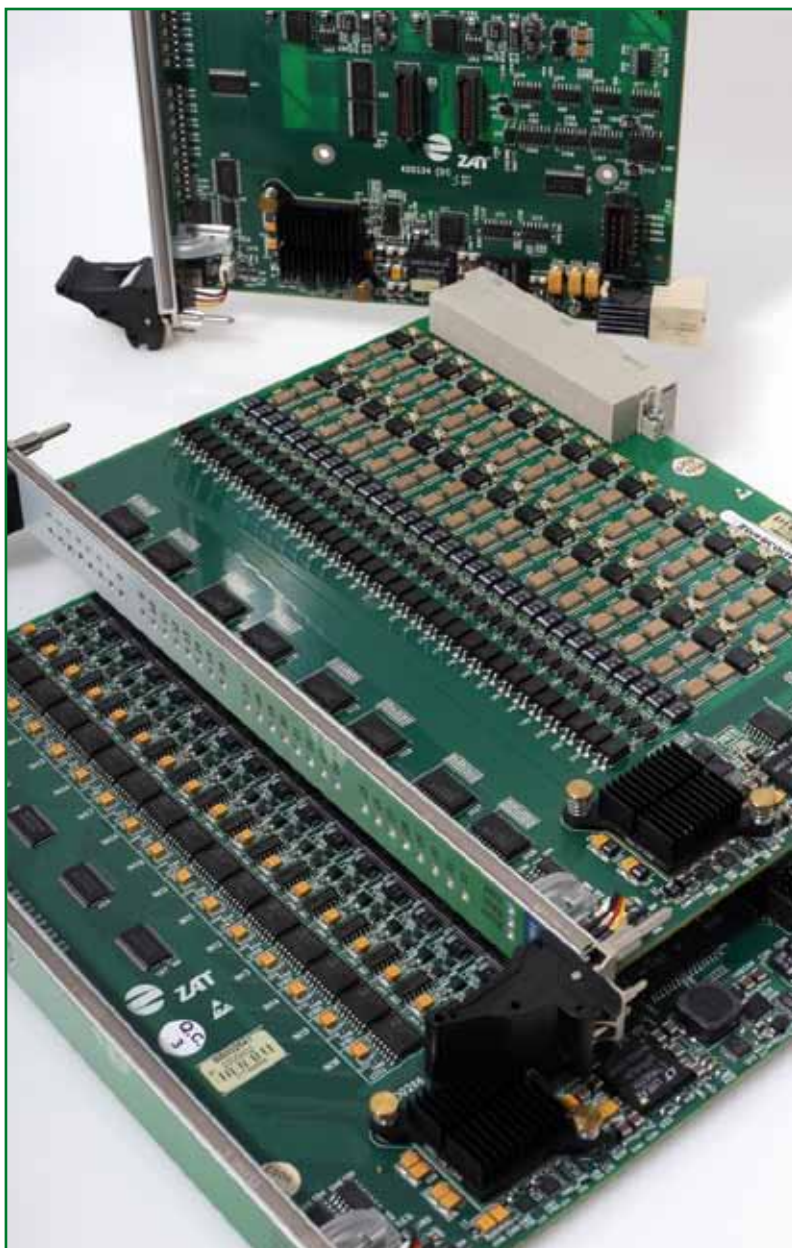
- **Boards of binary inputs** - 32 up to 64 binary inputs in the board, input voltage typ. 24VDC, resolution 1 ms, diagnostics of interrupted line. Special inputs for speed sensors

- **Boards of binary outputs**  
- 32 binary outputs (load 60V 0,3A), optional FAIL Safe function (upon loss of communication with the control board all outputs disconnect).

- **Boards of analogue inputs and outputs** - 16/4 up to 32/0 inputs /outputs in the board, basic range  $\pm 20\text{mA}$ , ultra-accurate inputs 0,05%, high resistance against interference, optional speed of AD transfer. Board with integrated controller for fast control loops

- **Communication boards**  
- master Profibus DP, 4 Ethernet 100BASE channels, industrial Ethernet POWERLINK, 8 x asynchronous serial line RS232/422/485

Next group of Z200 control stations components is a set of modules designed for adjustment of non-standard signals range, galvanic isolation of power supply of sensors in individual channels etc. These modules are inserted in the rear part of the rack.



## CONCLUSION

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Stations Z100 and Z200 have completely been integrated into the SandRA control system, which enables to use all project and auxiliary tools (Pertinax project and programming tool, Pertinax Project Database etc.) and at the same time ensures high level of ZAT a.s. products continuity (integration of new stations into existing applications, transmission of application SW, usage of operating personnel's knowledge etc.). Thus, in the SandRA family ZAT a.s. can offer its customers solutions based on the new HW platform, produced of the most modern components and by means of modern technologies with long-term prospects of supplies and further development.

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