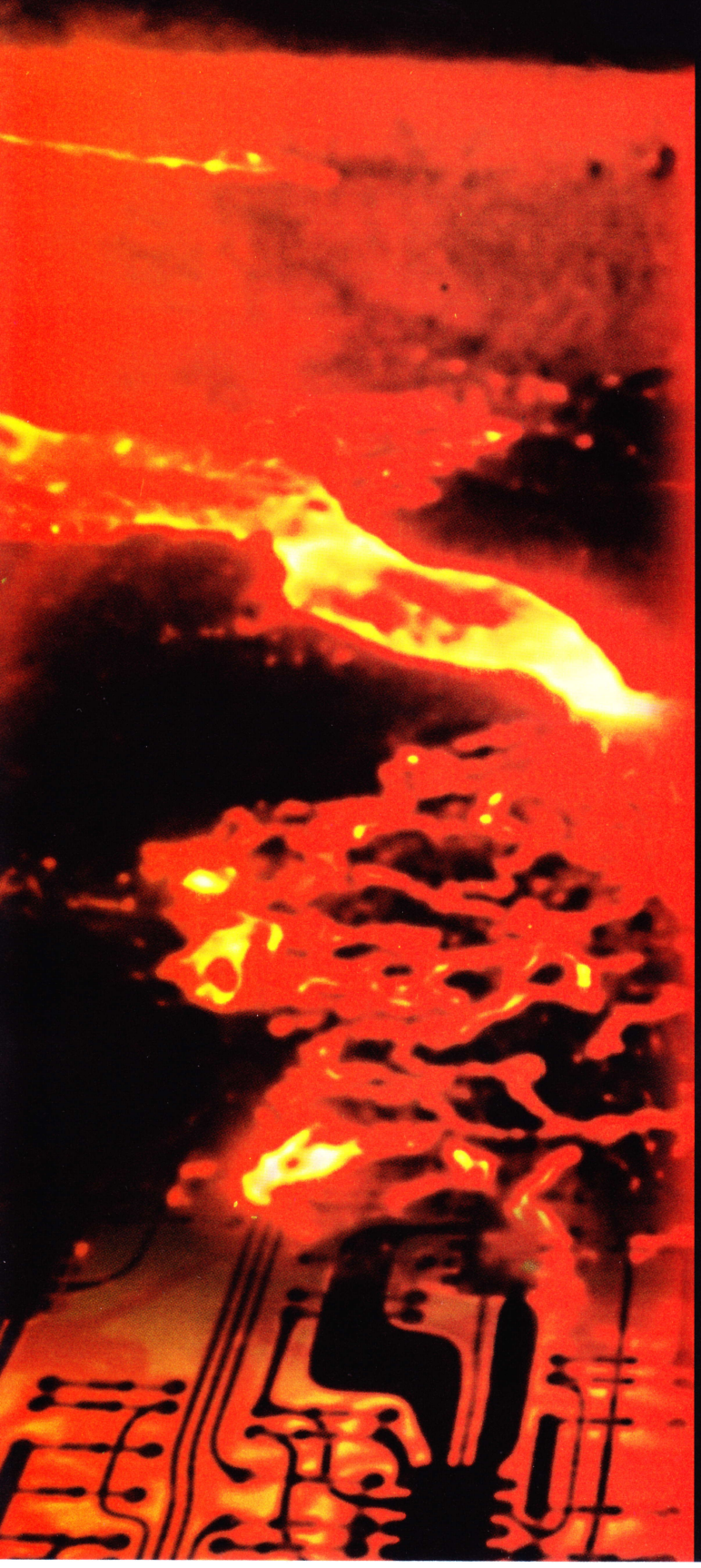
Monitoring and Control Systems for Industrial Processes



CALORIMETER

The Calorimeter is one of the products of MIP's activities in the field of monitoring and control systems for industrial processes.

Essence of the system

The Calorimeter in the non-contact measurement of the calorific value and ash content of coal using the gamma ray principle. The measuring is done on the excavators or the conveyer belts and is not influenced by changes in the thickness of the passing layers of coal and the irregularity of the surface of the passing coal.

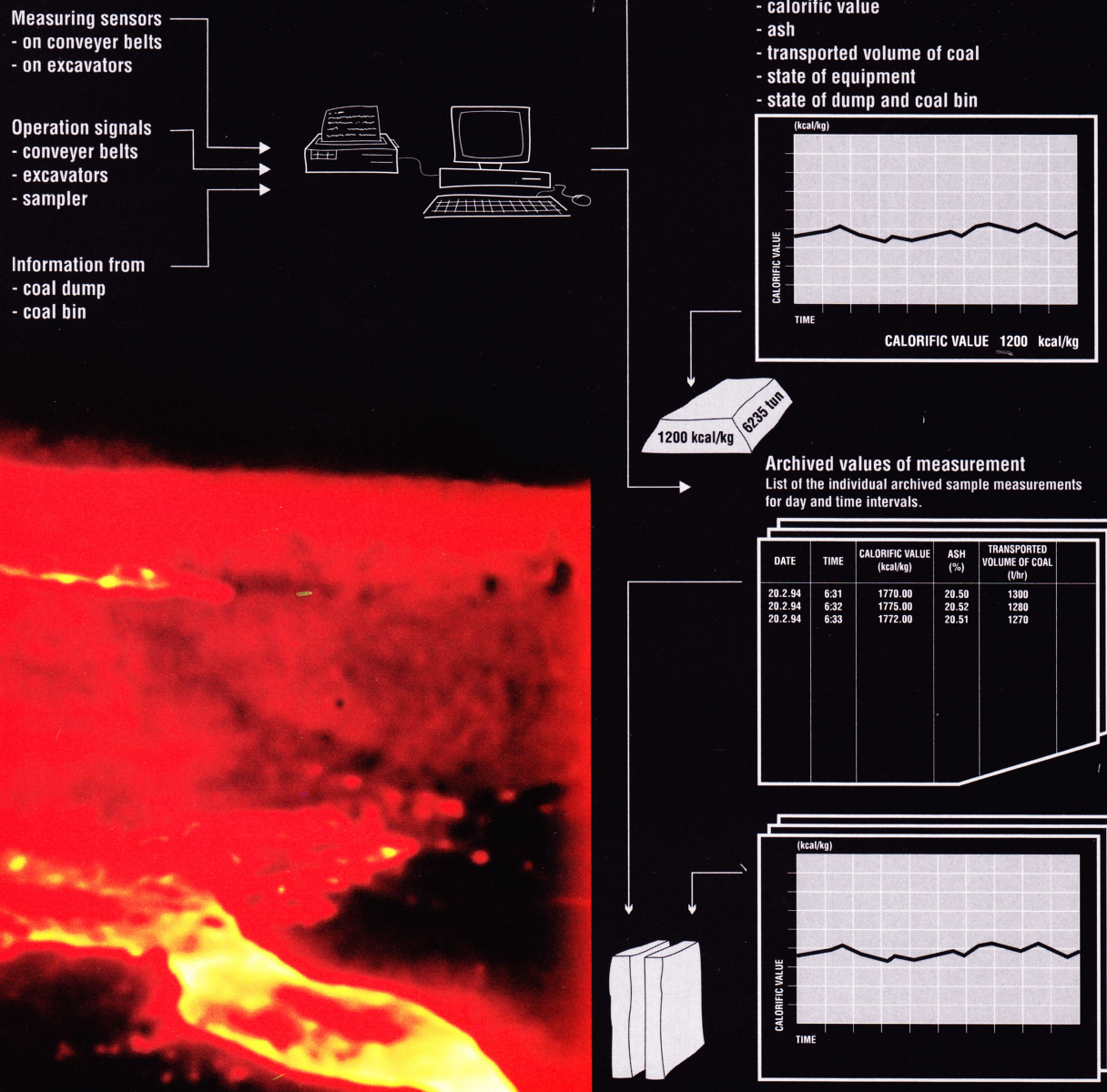
Application

- control extraction of coal at coal mines, that is regulation of the volume and quality of the output (final product), mixing of coal at dumps,
- control of coal separation (continuous monitoring of inputs, outputs and mixing at the dump, attainment of increased coal production as per desired parameters, automatic removal of unsuitable coal and initiation of further processing),
- control of the coal preparation plant (reduction of losses arising from unseparated coal, minimization of deviations from the desired quality standards),
- control of coaling for electrical power stations, heat plants and cement works (increase efficiency in the production of electrical energy and heat, coal quality control from the ecological point of view),
- control of operations at steel works (in terms of ash content in coke)

Description of system

- information from the technological process is received from sensors located on the excavators or conveyer belts, which continuously measure the ash content and volume of the passing coal using the non-contact gamma ray system. It is therefore not necessary to construct special collectior equipment,
- signals of state are indicative of the mode of operation (stoppage) of the equipment on which the sensors are located (excavators, conveyer belts),
- after the processing of the information from the technological process, the operator is immediately informed of the calorific value and ash content of the passing coal; he is therefore able to imme diately react to the arising situation and by technological transfer of the coal flow to another conveyer belt, sector of the dump, or bin and can add further coal from the dump or the bin to obtain the desired quality. The equipment at the same time informs the operator of the estimated volume of passing coal,
- the measured values are graphically presented on the computer screen, respectively, the printer, and saved to the computer hard disk,
- the individual sensors are calibrated for the type of coal, which they are intended to measure. The calibration of the sensors is checked by the operators, technicians and the customer's other laboratory employees using simple methods and as required adjusted by changing the calculation constants. The operator reacts to the various types of coal (according to chemical composition from the various mines or suppliers) by switching the calculator curves in the Calorimeter's computer,
- the Calorimeter processes data for the simple interactive evaluation of the archived information, from partial samples through variable cumulation and conversion of values in table and graphic form, which is supported by the simplicity of the operation on the part of the

System Configuration



operators and dispatchers, but also further specialized or control workers,
- the Calorimeter processes archived information in protocol form (shift and daily production protocols, dump maps),
- the Calorimeter prepares database information for specific use,
- the preceding information may be supplied to other specialist and control workers in the information-control network (sales, laboratory, management and production planning, product quality control, etc.),
- information from the Calorimeter may be used as an input for further automatic control systems (for instance, control of combustion processes).

Structure of system

The Calorimeter is made up of the measuring sensors, cables, sensor evaluator units, signal processing units (according to the solution this can be part of the computer), computer (subject to the working environment either industrial or office design), printers, standby power source (according to the local conditions on the customer's premises). This basic configuration is further expanded to concrete operations.

Contact

If you have the feeling, that it would be suitable to consult your feelings, problems and requirements with regard to offer, please feel free to contact us. We look forward to mutual cooperation.

Motto

"Complex information on production and automation of its management guarantees your success!"

Address

MIP, spol. s r.o. (Ltd.),
Velká nad Veličkou 628
696 74 Velká nad Veličkou
Czech Republic
Phone (++42) 631 92331

Exporter:

ŠKODAEXPORT, Commercial Group S 100
Opletalova 41, 113 32 Praha 1
Czech Republic
Phone (++42) 2 21004111
Fax (++42) 2 264029