



**Environmental Technology**  
Innovative solutions for hydraulic drive  
and control technology

## Innovative solutions for hydraulic drive and control technology

All SAR developments are focused on user requirements in the area of grate firing of waste, biomass and substitute fuels:

- Combustion control system SAR-FLR
- SAR SNCR control
- SAR fire length control
- PPL component library

This allows us to offer client and plant specific solutions from a single source.

Through in-depth analysis and subsequent optimised design of the overall system, we can offer state of the art hydraulic systems which can simultaneously increase the performance of an application and/or reduce wear and tear.

Another aspect is the optimisation of service and maintenance costs. Many operators are confronted with proprietary hydraulic control systems, so-called "black boxes", by their original equipment manufacturers. These "black boxes" have several disadvantages, e.g., it is often difficult to carry out a failure analysis, because the required signals are not transferred to the parent process control system, or only transferred in a very limited fashion.

An autonomous and vendor-independent adaptation to changed operating conditions can often be difficult or even impossible, as certain parameters cannot be changed and/or the source code of the software is not available.

Frequently, these systems can only be serviced and maintained by the manufacturer, leading to undesired dependencies on the part of the operator. When considering this dependency in the context of plant availability, there is a latent risk, the extent of which only becomes apparent when a corresponding incident occurs.

The solutions developed by SAR combine our strong know-how in the field of measuring, control and regulation technology with our long-standing process-related experience with hydraulic systems.

As a result, our experience with the control and regulation of grate furnaces is also of benefit to us in the construction of control systems for the associated hydraulic systems. For example, it is essential for a combustion control system that all hydraulic drives such as grate and fuel feed can be fully controlled and regulated. This is the only way in which suitable movement sequences for each incineration process can be established.



SAR also consciously and consistently emphasises the keywords "open and transparent" in relation to its hydraulic control systems. For the following reasons, we prefer the implementation, for example of a location or position and synchronisation control, as a pure software solution.

This means that additional electronic equipment (e.g. modules for a position control or a synchronisation control) can be saved. These are also frequently designed as proprietary systems, which establish dependencies to the supplier and represent additional expenses for the spares inventory.

The software solution favoured by us offers the following advantages:

- In contrast to electronic modules, software is designed transparently and verifiably, which greatly facilitates troubleshooting.
- Software is not subject to any age-related wear or a drift.
- Software can be changed at any time, and can be adapted to changed operating conditions (e.g. valve replacement).
- The cost of a software solution is identical compared to a solution using electronic modules.
- Electronics modules often have limited availability on the part of the manufacturer and are subject to a product life cycle, which often does not correlate with the life span of large-scale plants. The software solution can always be migrated by any supplier. This means that there is never a dependent relationship.

We can also draw on a wealth of experience in the specification, planning and installation of the associated measuring technology. There is a frequent requirement for the long routes travelled by hydraulic cylinders to be measured under rough conditions, precisely and reliably as an absolute signal. If cylinders do not have integrated travel measurements, SAR can offer optimal solutions tailored to the individual application.

A further key aspect of hydraulic systems is an adequate option for on-site operation. Here too, SAR can offer a convincing complete solution from a single source. From design, planning, construction to installation and commissioning, SAR can offer solutions which are precisely tailored to the requirements of the operator. Whether wire draw encoders or magneto-restrictive position encoders - we have the expertise to deal with all systems in a professional manner, as demonstrated in corresponding reference projects.

SAR also places great importance on safety in relation to hydraulic systems. Any safety integrity level (SIL) can be implemented, for example. This topic, as well as the approach, is discussed in detail in the "SIL consulting" flyer.

### PRODUCT AND SERVICE RANGE IN THE FIELD OF HYDRAULICS

For new plants, as well as in part for the modernisation of existing plants:

- Project planning of complete hydraulic plants
- Hydraulic cylinders, hydraulic power units
- Hydraulic piping, installation
- Planning, construction and installation of hydraulic cabinets
- Proportional valve technology with associated electronic amplifier modules
- Regulation and control technology for hydraulic systems (location controls, synchronisation controls etc.)
- Innovative and conventional operating systems for quick fault diagnosis and efficient service or maintenance



SAR Elektronik GmbH is an owner-managed, medium-sized company, founded in 1985 in Dingolfing, Lower Bavaria. Due to the constant growth, the establishment of first branches followed in Germany, as well as others in Europe and beyond.

Today, the SAR Group has over 700 employees providing future-oriented automation solutions from a single source, for both the industrial manufacturing and the process and environmental technology sector.

Whether as a general or sub-contractor - with SAR you can rely on the excellence, experience and flexibility of a medium-sized company with flat hierarchies. Our actions are based on in-depth experience and sound expertise. We offer our clients sustainable solutions that do not neglect either ecological or economic aspects.

#### **Process and Environmental Technology - scope of supply and services**

From design to implementation, maintenance and training, you receive all services in the disciplines of process automation, electrical and process control technology, and instrumentation and control technology.

We automate systems for thermal waste treatment (waste-to-energy plants, hazardous waste incineration plants, etc.) with combined power and heat generation. In addition, we provide you with automation solutions for RDF, biomass and industrial power plants as well as the specific exhaust air and flue gas purification thereof. Our know-how in petrol chemistry is also in great demand.

Further reference projects can be called up at  
[www.sar.biz](http://www.sar.biz)

Our core competencies in the area of combustion technology are compiled at  
[www.combustioncontrol.biz](http://www.combustioncontrol.biz)  
Among other things, lectures from various conferences and trade fairs are available here.

Detailed information regarding the Premium Plant Library PPL can be found at  
[www.ppl.biz](http://www.ppl.biz)

Ask for our reference lists!

Also feel free to contact our customers to find out more about SAR's work and quality.

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