

# Sinac<sup>®</sup>

Universal heat generators

# A family for every need

Sinac is one of five product families from EFD Induction. Together, these product families let you perform virtually any industrial heating task. And in the unlikely event they don't meet your specific needs, we can sit down with you and devise your own customized induction heating solution.

EFD Induction also develops, commercializes and supplies mechanical handling equipment, coils and software control systems. We also offer a comprehensive, worldwide service program. To learn more about EFD Induction—and how we can help your business—please contact your nearest EFD Induction office.



## **Sinac**®

Universal heat generators



## **Weldac**®

High-output solid-state welders



## **Minac**®

Mobile heat generators



## **HeatLine**®

Industrial heat treatment systems



## **HardLine**®

Industrial heat processing systems



# Stationary converters for companies on the move



*Employed worldwide—Sinac systems are hard at work at hundreds of plants around the globe.*

Sinac is EFD Induction's range of complete stationary heating systems. Each Sinac includes a frequency converter, capacitors and, where necessary, a matching unit. All Sinac coils, the components that actually deliver heat to workpieces, are custom-designed to best suit your specific applications and conditions.

Sinac is a truly comprehensive range that includes parallel- and serial-compensated converters suitable for virtually any induction heating application. Dual frequency systems are also available. Sinac's output power ratings and frequencies range from 5-2000 kW and 0.3-350 kHz.

Incorporating the very latest advances in induction technology, the Sinac range offers unrivaled efficiency and application flexibility. Some examples are a diode rectifier with a constant power factor of 0.95 at all power levels, an efficiency factor of 85-87% from input at the rectifier to output at the coil and automatic load matching that ensures full output power. Just as important, all Sinac solutions are backed by EFD Induction's worldwide service and support program.

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## THREE KEY BENEFITS

### **Maximum productivity**

Automatic frequency control maintains optimum output power throughout heating cycles. Output power can also be continuously regulated either manually or with standard external controls. Easy operation, small footprints and proven reliability help maximize equipment uptime and output.

### **Improved quality**

Sinac delivers the quality-improving benefits of modern induction heating: precise, no-contact, con-

trollable heat with reproducible temperatures and ramp-up and dwell times. Better quality also reduces costs by minimizing scrap and re-working.

### **Operational flexibility**

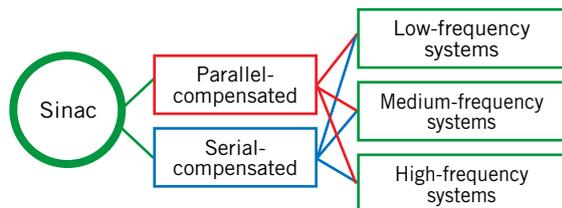
Sinac's wide range of systems and technical features let you choose a solution that's just right for your particular needs. Thyristor, IGBT and PowerMOS inverters are available—as are various rectifiers and matching and control systems, for example automatic load matching.

# Sinac: the complete line-up

Whatever you want from a stationary converter, it's more than likely you'll find it within the Sinac range. We design, make, supply, install and maintain all the elements in each system. We can also help with feasibility studies: whether it's computer-aided simulation of varying technical solutions, or detailed cost-benefit analyses of different investment strategies.

In addition, all our serial-compensated systems come with diode rectifiers ensuring a high efficiency factor and a constant power factor. The result is lower energy bills—and we'll gladly help you calculate exactly how much you save.

Once you've opted for a Sinac system, we at EFD Induction are always on hand to assist with installation, commissioning, training, maintenance and upgrades.



*The low-, medium- and high-frequency Sinac systems are available with both parallel- and serial-compensated converters.*

## **Low-frequency systems**

Sinac's parallel-compensated low-frequency systems feature three-phase thyristor rectifiers and full bridge thyristor inverters. The serial-compensated systems include three-phase diode rectifiers, as well as rugged IGBT transistors that are virtually short-circuit proof.

## **Medium-frequency systems**

Sinac offers parallel- and serial-compensated medium frequency systems. The former feature three-phase thyristor rectifiers, the latter three-phase diode rectifiers. Both versions are equipped with





rugged, virtually short-circuit proof IGBT transistors. The low-power serial-compensated systems feature hand-held transformers (connected with flexible power cables) that support a wide range of coils.

#### **High-frequency systems**

Sinac's high-frequency systems also offer parallel- and serial-compensated converters. The parallel-compensated high-frequency systems are based on the same fast IGBT technology as the medium-frequency systems, making it possible to run up to 200 kHz.

Sinac's serial-compensated high-frequency systems feature IGBT transistors and three-phase diode rectifiers. The IGBT inverters are based on EFD Induction-patented switching pattern technology that utilizes the IGBT transistors at high frequencies without any extra stress. Solid-state technology helps ensure maximum uptime and throughput.

#### **Multi-frequency systems**

Sinac multi-frequency systems use patented EFD Induction technology to deliver two different frequencies—one high and one low—to one coil at the same time. This gives you the flexibility to treat a wide range of components. The systems are serial-compensated and feature rugged IGBT transistors in full bridge circuits. The custom-designed coils are connected directly to the inverter matching cabinets.

#### **Custom-engineered systems**

Developing one-off solutions is a speciality at EFD Induction. We have the expertise and experience needed to design and manufacture a heating solution for practically any industrial process.

# The Sinac advantage

Choosing Sinac gives you more than the market's most advanced, most reliable induction heating systems. You also get easy access to EFD Induction's global service, training and spare parts network. This network—which is made up of manufacturing plants, service centers and local representatives— means you are never far from qualified help and support.

Opting for Sinac also ensures you get the best possible solution tailored to your specific needs and conditions. Prior to designing your system, our engineers, metallurgists and materials experts assess your requirements. Testing and computer simulation at

our labs guarantee you receive equipment, which is optimized to your applications and can be painlessly integrated into existing production lines and processes.

Sinac is available as standard or custom-made systems. But whichever you choose, Sinac will help boost quality, increase throughput and lower costs. If you'd like to know how, just give us a call today. Our reference library has dozens of cases on file where Sinac has achieved these goals. A Sinac system could have a big impact on your business. We'd like to show you how.



*A serial-compensated medium-frequency Sinac at work preheating industrial components.*



*Perfect for the toughest jobs; a Sinac heat-treating crankshaft.*