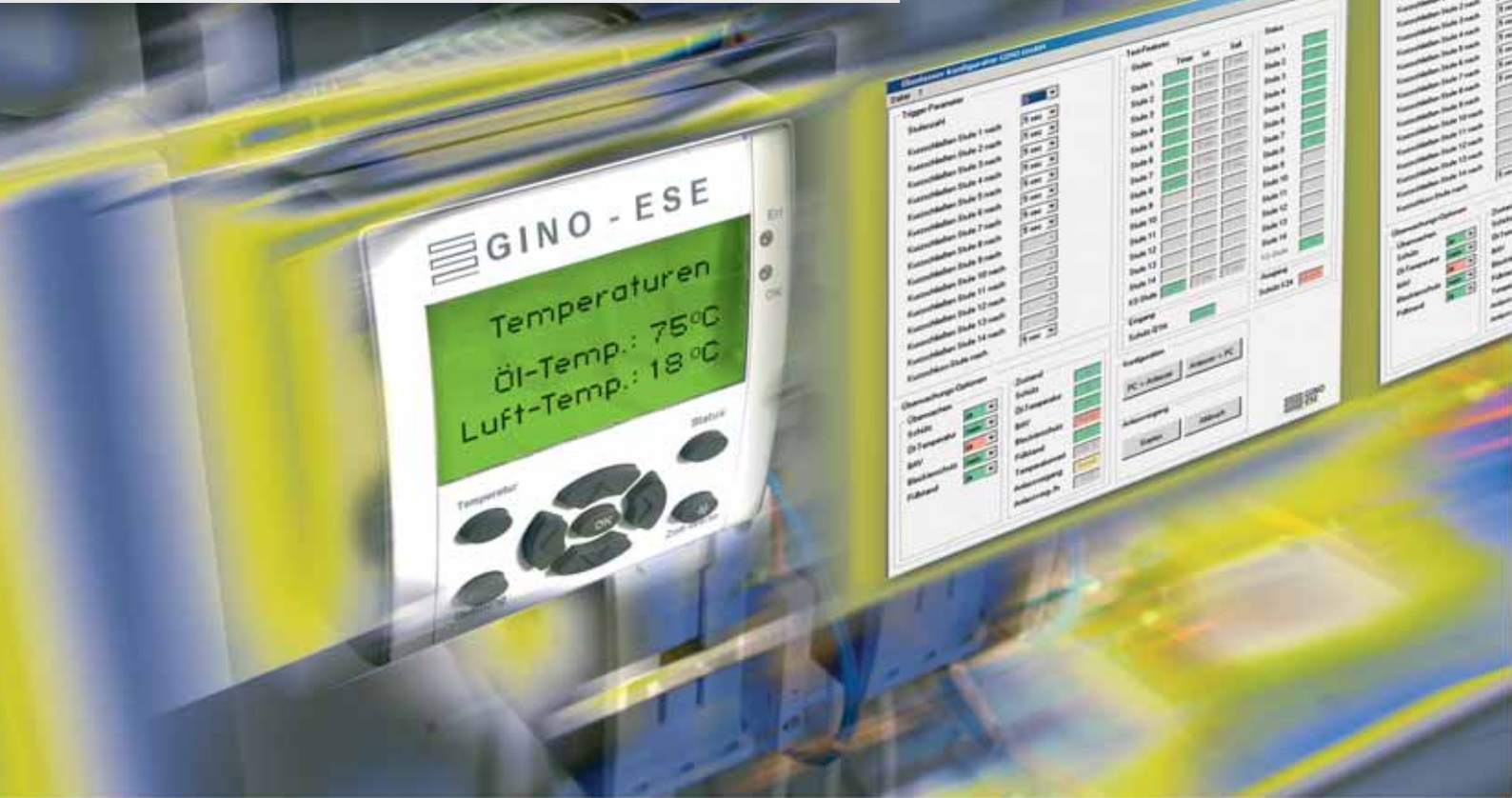


MFD-Titan and easy: Modern Control Technology for Rugged Starting Resistors



GINO starting resistors are used when large electrical machines cannot be switched with frequency inverters due to their power, difficult climatic conditions or due to fluctuating power supply networks. As they are frequently subject to extreme loads, control operation and visualization must also be implemented with rugged and maintenance free devices. The solution: MFD-Titan multi-function display and easy control relays.





Large machines cannot always be started directly: many pumps, fans, and mixers, as well as belt drives and shredders can only be started with mains-friendly starters. For these kinds of applications, slip-ring motors with starting resistors are used. GINO manufactures rugged and maintenance-free oil and control starters that can withstand the extreme conditions. With a suitable design and control system, the starters can also be used for speed control.

Oil or air-cooled?

Starters are oil or air-cooled, depending on the application. Oil-cooled starters are more compact and more economical than air-cooled devices. The oil is used here solely as a heat store. The large thermal time constants and the resulting long cooling periods only make them suitable for use in applications with a low number of startup operations per hour. For applications with a large number of startup operations per hour, the use of air-cooled starting resistors with shorter cooling periods is more economical. The size of the starter depends on the oil volume and the required thermal capacity. The operations per hour can be determined by the size of the tank surface: ribs and radiators can quadruple the number of operations possible. Classical applications for oil starters are machines that require a high starting torque such as all types of mills and crushers. Even today, there are no other economical alternatives for oil-cooled starters. A special case involves degrees of protection higher than IP23, where the heat is dissipated by means of heat exchangers.

THE COMPANY

GINO GmbH Elektrotechnische Fabrik is based in Bonn and Eisenach, and began life as a foundry at the beginning of the last century under the name Carl Wiemann GmbH. The product range includes air and oil-cooled starting resistors, pre-wired power, braking, filter and grounding resistors for applications in industry, and in drive, power station and traffic technology. Contact: www.gino.de

Control under extreme conditions

GINO accordingly places high demands on the communication modules for control, operation and visualization. Devices of the easy series and MFD-Titan have become first choice for these tasks: The easy series provides modules for data and signal exchange with a control station via Profibus, DeviceNet or CANopen. In this way, the machine is monitored for blocking via the counter input of an easy800.

With the simple and easy-to-handle control relay, customer requirements can be implemented swiftly using state-of-the-art technology, such as the acquisition of external signals, visualization, logging and communication. The brush lifting device of the slip-ring motors is also controlled via easy. Compared to other control and operating solutions, easy is highly cost efficient. The modular series offers all the required enhancement options required including the frequency counter input.

Visualization with MFD-Titan

If necessary, an MFD-Titan display can be used for defining parameters and for logging.

MFD-Titan is designed as an industrial device for rugged operating conditions in machines or systems. The operating temperature range is thus from -25 to +55 °C. Furthermore, all connections are provided with maintenance free and vibration-resistant spring-loaded terminals. The full-featured graphic display (IP65 protection) with 132 x 64 pixels also comes with a backlight that can be switched on as required. The operator keypad can also be configured to individual requirements.

Oil starter types vary in their number of startup stages as well as in the various monitoring parameters such as oil temperature or switching state. The optional OPC server is

available for easy800 for simpler remote visualization and operation. Together with the easy Ethernet module and the visualization written in C#, the different oil starter types can now be configured individually from the PC. All relevant parameters of the startup operation are clearly displayed, and the operator can make interventions if necessary. The OPC client also enables users to implement their own control station.

Contactors

GINO also prefers Moeller products when it comes to contactors. These are selected on the basis of criteria determined and tested in the laboratory. GINO places special importance on the switching of resistive loads and the currents and voltages present during starting. As the frequency of the currents and voltages becomes close to DC current as the synchronous speed is approached, contactors must also be able to carry out these difficult switching operations properly. The values of Moeller's contactors are ideal for this.

CONCLUSION

Dipl.Ing. Chr. Schink, from GINO R&D had this to say: "Our maintenance free starters are renowned for their highly rugged design. For this to continue, we ensure that the elements used for control, operation and visualization also meet the most stringent requirements. The user-friendly modules of the easy series and MFD-Titan are exactly the right choice for us. Thanks to their simple expandability, they can be adapted flexibly to the requirements at hand. Our customers just pay for what they actually require, whilst still maintaining the possibility of all options in the future. The short delivery times and Moeller's competent services were also important factors in choosing easy."



