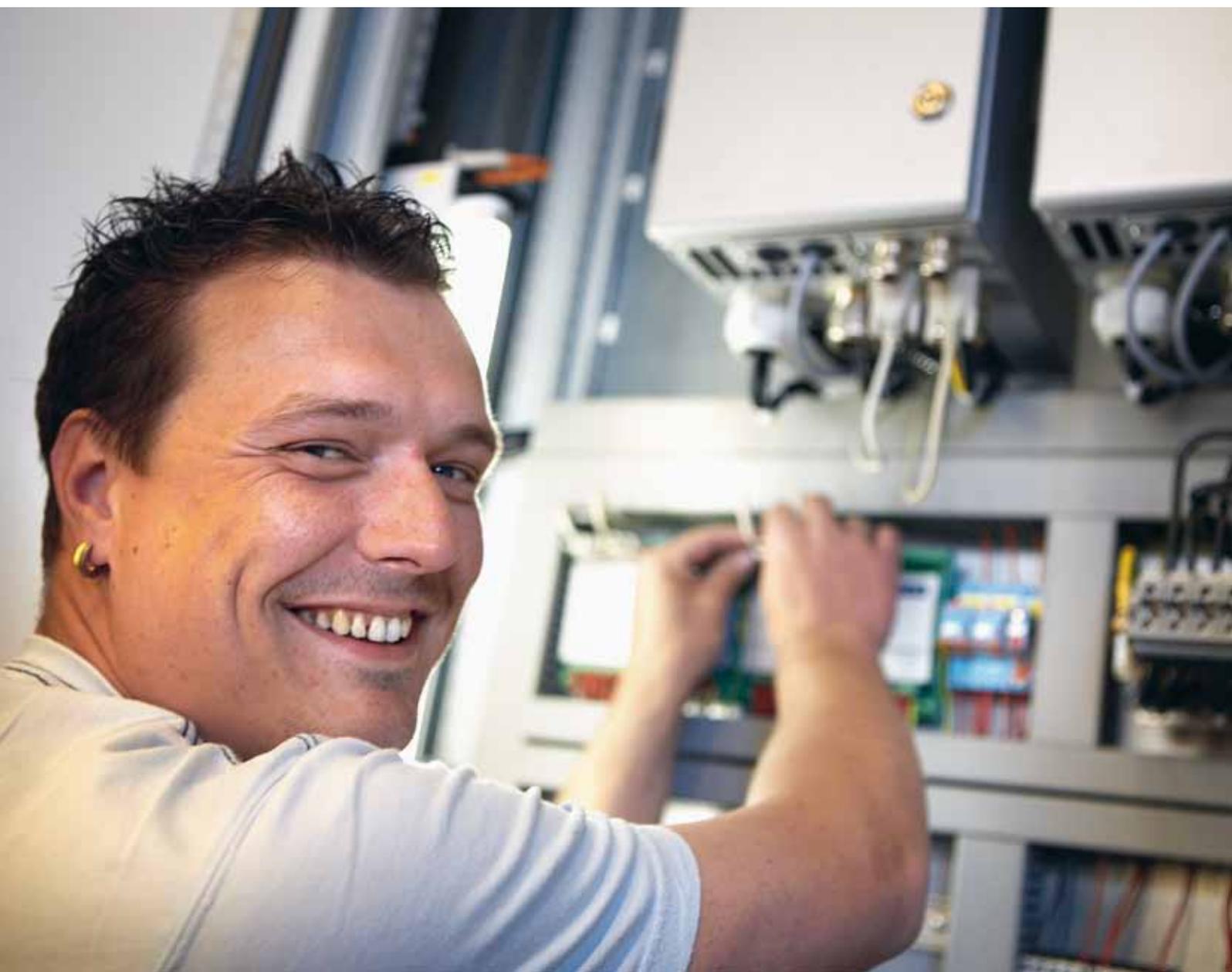




# Know-how and commitment are always included

Service offer of CG Drives & Automation





We put all our energy into saving yours!

Saving energy is not just about your electricity bill. It's about relying on everything running efficiently without unpleasant surprises, and on us being there to support you if needed. Our service engineers use their know-how and positive attitude to minimize downtime in your process!

Simple, reliable and robust

Simplicity and reliability are keywords for our products and for our company. Simplicity is intuitive handling and easy servicing, but also the availability of our employees. Reliability comes from robust high-quality products, and our down-to-earth people who are always ready to roll up their sleeves to keep your process up and running. They will analyse the situation to find the best long-term solution. With our help you will be prepared also for the unexpected!

Personal commitment is always included

Supplying the technical solution is one thing, making sure it works according to your needs is another. That requires personal commitment and a true understanding of your process. Our service is provided by our service centres in Sweden, Germany and the Netherlands, and through a global network of authorized partners. The partners are carefully selected and receive annual training by our experts in order to keep up to date with new products and technologies.



## Modular design offers redundancy

The modular design of our AC drives in the 160 to 3,000 kW power range gives easy access for servicing. The power modules can be folded out, which means repairs can be done without taking the whole drive apart. A complete power module can be kept as a spare part for maximum security. The modular system also offers the possibility of redundancy operation, in order to avoid complete standstill while servicing one of the power modules. Operation can continue by temporarily running with reduced power capacity. For very critical processes you can even equip the system with an extra power module, to ensure full capacity also with one of the modules out of operation. The redundancy mode is activated via a communication bus or service parameter setting. After disconnecting the module cables, you can restart the drive. Switch solutions with internal electronic bypass for even quicker handling can be implemented in customized cabinet solutions.

## High serviceability is part of the service offer

Our first aim is to minimize the need for service. Our robust products are well noted for high reliability. They withstand the toughest environments, with IP54 certified metal enclosures and sealed connections. We have further increased reliability by minimizing the number of boards, connections and mechanical parts. In addition, the system is continuously monitored and any possible dangerous situation will cause the product to stop before damage occurs.

The second aim is to ensure high serviceability in order to mi-

nimize the time required for service and maintenance actions. Failure can still occur, for example due to extreme overvoltage spikes from the mains, and wear parts will eventually need to be exchanged. Our products are designed to let you retain operation without unnecessary delay. Fans and other parts are easy to access. In case of a broken IGBT, input rectifier or fan, the product will stop and the cause will be indicated on the display. You can quickly identify the problem and take necessary measures.



# Service offer to minimize your downtime

## Technical support

High availability is a keyword when supporting you in your daily work. Our skilled engineers are here to answer your questions by phone or e-mail. They will analyse the situation quickly and propose solutions to the most complex problems. For highly critical processes we can offer 24/7 services. A support guide on our website can help you prepare your case in order to receive the best assistance.

## Field service

Field service can include commissioning, maintenance, fault remedy and equipment repairs at your premises. Service contracts can be drawn up for critical processes requiring guaranteed availability.

## Workshop repairs

We offer qualified and quick workshop repairs. For equipment found to be impossible or inappropriate to repair, we

can in most cases offer replacement products. A repair return form is available on our website.

**Spare parts and replacement equipment**  
Quick delivery of spare parts or replacement equipment helps reduce costly downtime. We keep units available throughout the products' lifecycle and as long as it is technically and economically viable.

**Training for the best use in your process**  
Our trainings combine theoretical and practical exercises. They cover areas such as functionality, installation, commissioning, dimensioning, programming and troubleshooting. We also design customer-specific trainings, to help you make the best use of your specific application. Our application centre in Germany offers the opportunity of realistic practice of, for example, crane control.



# Security for your critical processes

## Service contracts

A service contract offers security for your critical processes. Leave the worries to us and benefit from minimized downtime and full control of your costs. You are guaranteed a maximum response time from our service department, around the clock, seven days a week. Depending on the situation, this can involve quick assistance via telephone, immediate delivery of a critical spare part or a visit on site by one of our service engineers.

## Maintenance programmes

A dedicated maintenance programme will turn unpredictable costs into fixed expenses, and let you spend time on preventive measures instead of unplanned breakdowns. Together we will develop a long term programme customized to your

needs. We make an initial inventory of the status of existing equipment and based on this establish the most cost-efficient measures to maximize output during the entire product life-cycles. We will consider aspects such as the machine workload and environmental conditions that may affect the equipment. During the year, we will perform preventive maintenance at the agreed frequency. The condition of wear parts such as capacitors and fans is checked, and any worn-out parts are exchanged. Mechanical and electrical connections are reviewed, as are the equipment's cooling system and any environmental impact. You will receive a full maintenance report at the end of the year, documenting all actions taken and giving recommendations for the year to come. We can also advise on improvements that would further enhance process performance.



All electric motor driven applications involved in the compounding process are controlled by Emotron AC drives. Close to 250 units control everything from 370 W pumps to 800 kW extruders.

## “Communication is key to fast and reliable service”

SABIC Innovative Plastics, in the Netherlands, is part of the SABIC group, one on the world’s fastest growing chemical industries with a turnover of EUR 30 billion. The plant in Bergen op Zoom works mainly with plastic compounding, i.e. the mixing of polymers and additives into plastic granulates that are used to produce a great variety of end products such as CDs, crash helmets, mobile phone casings and even the complete bodywork of electric cars.

Compounding process involves 250 AC drives. CG Drives & Automation has been on top of SABIC’s preferred supplier list for many years, and all electric motor driven applications are now controlled by their AC drives. Close to 250 units control everything from small pumps of 370 W to massive extruders of 800 kW. The critical extruding process is controlled by Emotron VFX for up to 1,500 A, developed

for high torque applications and based on the latest technology.

The person responsible for the maintenance of all electrical LV processes is Jos van Dooremaal, an Electrical & Instrumentation specialist who joined SABIC in 1972. After one year as an operator, he moved on to maintenance and is now part of the reliability team for the compounding plants.



Jos van Dooremaal is responsible for maintenance of all electrical LV processes at SABIC Innovative Plastics. “Production demands 100% availability on all machines. To ensure this, we rely on fast service. CG Drives & Automation handle this perfectly.”

He knows all about failure analysis and sustainable improvements. With his “Six Sigma black belt”, he aims to fulfil the Six Sigma management goals – eliminating the cause of unexpected failure and maintaining low failure rates and downtime. “SABIC has used Emotron AC drives for the past 30 years, and the main reason is the good experience we have from working with CG Drives & Automation and with their products,” says Jos van Dooremaal.

**Reliable partner helps maintain 100% availability**  
The compounding process is under pressure to have 100% availability on all machines. Maximum output and reliability are required throughout the production line. This puts a big responsibility on Jos and his team. “Machines that stand still cost money,” states Jos simply. “Production will not accept unexpected downtime during periods of high demand. To ensure high reliability, we train our own engineers to solve first line problems, and we sign service and maintenance contracts for critical equipment. If something goes wrong, we need to be able to rely on support from a supplier that we can trust. This is the case with CG Drives & Automation; they handle this perfectly.”

**Service exceeding the expected**  
Jos van Dooremaal remembers one occasion: They had problems with a competitor’s AC drive which was not yet submitted to a service contract. It was after office hours, but the maintenance engineer took a chance and called CG Drives & Automation. Instead of simply referring him to the competitor’s service department, the CG Drives & Automation engineer on duty soon turned up at the plant. He got the machine up and running that same night by installing a brand new Emotron AC drive. The paper work was left to the morning crew to handle.

Jos shows an e-mail that the same maintenance engineer sent to CG Drives & Automation management the day after: “During my 22 years as a maintenance engineer I have been dealing with many contractors, and I must say that it’s a relief to work with this guy from CG Drives & Automation. He is reliable, fast, competent, and does everything in a nice way!”

**Predictable costs and preventive actions**  
For SABIC, the value of having this maintenance and response contract well exceeds the cost. Knowing the exact maintenance expense for the coming year and not risking unpleasant surprises is also an advantage. A special bonus system grants the SABIC engineers a bonus if no unexpected failures take place. The first contract for the 250 AC drives at the Bergen op Zoom plant was signed five years ago. During the first two years *no* failures were reported. “In addition, we now know the status of our equipment much better. Knowing when the AC drives will reach the end of their lifetime means we can preventatively replace them with new products.”

**Direct communication is key**  
But the greatest benefit of the CG Drives & Automation maintenance and response contract, Jos van Dooremaal establishes without hesitation is: “The direct communication between the SABIC and CG Drives & Automation engineers! They visit our plant on a regular basis, and get acquainted with the equipment as well as our processes and procedures. Our engineers are trained on the Emotron products, so we all speak the same “language”. We only need to say one word, and they understand exactly what’s going on, whether we communicate by phone, e-mail or face to face. This is very time saving, and key to fast service.”



Water/wastewater operations need to be up and running at all times. Halmstad municipality uses more than 300 Emotron products to control pumps, blowers and centrifuges. The robust design offers high reliability and fast service ensures minimized downtime in case problems occur.

Lars Bengtsson has worked with CG Drives & Automation for nearly 20 years: "We always get the help we need. The service engineers are easy to reach and know our specific processes."



## "High availability and application expertise"

The Swedish municipality of Halmstad uses equipment from CG Drives & Automation as standard for electric motor operations in their water/wastewater plants and pumping stations. They appreciate the high availability and application knowledge of the company's service engineers. More than 300 AC drives and softstarters control pumps, blowers and centrifuges to ensure energy efficiency, reliability and reduced mechanical wear.

### Energy consuming biological cleaning

Wastewater treatment is energy consuming. The biological process, in which the pollutants are broken down using micro organisms, requires large quantities of air which is blown into the water. The challenge is to control the air supply to ensure the exact right quantity of oxygen at the right time. Oxygenation makes the bacteria grow and multiply, and when the supply is stopped, the organisms start to feed on the pollutants instead and thereby clean the water. Sensors measure the oxygen levels and send signals to the equipment controlling the blower operation.

The blowers at the Halmstad treatment plant are operated with both constant and variable speed. Operations with variable speed are mainly controlled by Emotron AC drives from CG Drives & Automation. Emotron softstarters and shaft power monitors are used for operations with constant speed.

"We are now working to develop our monitoring and control

systems in order to further improve the efficiency of the air supply. This is a highly energy consuming process," says electrical engineer Lars Bengtsson.

### Critical operations demand reliable support

Water/wastewater operations need to be up and running at all times. These are critical processes with high demands for reliable control as well as fast service. Lars Bengtsson and his colleagues appreciate the high availability and application expertise of CG Drives & Automation's service engineers. This is essential in order for them to maintain efficiency and minimize downtime.

"We always get the help we need when contacting their service department," says Lars. "They are easy to reach and they know how the products are used in our specific processes. Should an AC drive break down, we can often have it repaired the same day. And if we need service on site, the service engineers are never far away."

They recently had problems with a 55 kW drive and needed urgent help. The CG Drives & Automation service engineer came the same day – only to establish that the AC drive worked fine, and that it was the motor that had failed. But

the trip was not in vain. With a well established relationship there are always things to discuss – questions regarding other operations, or future needs for new products.

### AC drives designed for harsh environments

The harsh environment with high levels of hydrogen-sulphide puts high demands on the equipment. The IP54 certified Emotron AC drives are well prepared to handle this. The robust design offers high reliability.

"We have worked with CG Drives & Automation for nearly 20 years, and during this time we have developed great confidence in their products," says Lars Bengtsson.

"When some other AC drive brand is delivered together with a new machine, we replace it with an Emotron as soon as it's worn out."

Also in cases like this, they turn to the CG Drives & Automation service department for support.

"They advise us on how we can best achieve the corresponding functionality, or even improve it, with an Emotron AC drive. We can then place the order directly with the service engineer, who makes sure that we get the exact right model and options."

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