



**QUALITY
IN REPAIR**

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UNIS GROUP IN GENERAL

UNIS Group is an international service company established in 1984 which specializes in repairing and selling industrial electronics. The electronics are cleaned, repaired and tested in accordance with strict quality standards.

Broad expertise

To respond effectively to problems, UNIS Group employs a number of expert technicians supported by first-class measurement equipment and many test facilities. Our large stock of spares makes it possible to resolve defects even more quickly.

From PLCs to drives, from HMIs to robot electronics. UNIS Group is your partner in the repair and service of industrial electronics:

- | | |
|---------------------|-------------------------|
| ▶ PLCs | ▶ HMI: Operator panels, |
| ▶ Frequency drives | Touch panels and |
| ▶ Soft starters | Monitors |
| ▶ Servo drives | ▶ Programmer devices |
| ▶ CNC controls | ▶ Power supplies |
| ▶ Robot electronics | ▶ Industrial PCs |
| ▶ Servo motors | ▶ PCBs |

What a one-stop-shop means for you is only one supplier for the repair of industrial electronics and servo motors!

UNIS Group offers continuity

We believe that our customers must have the ability to continue using their existing systems as long as possible. Based on this philosophy not only do we provide service on all the updated and new electronics, but also on the old and obsolete parts that the original manufacturer doesn't support anymore, so called the end-of-life products. We don't want to see our customers forced to update or invest in complete new systems.

Quality

UNIS Group stands for quality. Maintaining and improving the quality of our services is a continuous process. UNIS Group is certified for:

- ▶ Quality: ISO 9001:2008
- ▶ Environment: ISO 14001
- ▶ Safety: OHSAS 18001



Warranty

You will receive at least a one year warranty on repairs, sales and exchanges.

'No cure no pay'

UNIS Group has fixed prices for repairs. You know in advance the amount you have to pay. Repairs are always based on 'no cure, no pay' basis.

For many companies UNIS Group is a unique service partner for solving their production problems, by repairing (or replacing) defective industrial electronics.

If you have any questions, please contact our sales team by phone +31 566 62 29 41 or by e-mail int@unisgroup.com.

UNIS Group will be delighted to provide you with a trusted advice on the management, maintenance and repair of your industrial electronics.



REPAIR

UNIS Group repairs more than 38.000 parts a year. The repair department is located at the headquarters in the Netherlands. Professional engineers repair on the component level, supported by advanced measure and test equipment. UNIS Group is specialized in the repair of end-of-life as well as new electronics.

Fixed prices

After the electronic part has been received, you receive a non-obligatory quote. UNIS Group has a database consisting of over 300.000 different industrial electronics with their prices. The repair price is fixed. You know in advance the amount you have to pay.

'No cure, no pay'

All repairs are carried out on a 'no cure, no pay' basis. When a repair is unsuccessful, you will not be charged any of the repair costs. Depending on our agreement the repair will either be shipped back to you or disposed in a responsible manner.

Urgent repairs 24/7

Is your production standing still because of defective electronics? UNIS Group can offer you a solution by carrying out urgent repairs. UNIS Group will immediately start repairing the defective part once it has arrived.

You can also choose our exchange services if a replacement part is available in stock. In this case the functionally working part from our stock will be shipped to you immediately.

UNIS Group offers 24/7 service to minimise your production standstill. At extra costs, urgent repairs are also possible after office hours and during the weekend. With a response contract you can reduce / minimise these extra costs.

Component analysis

Delivery times are subject to availability of components required for a repair. When components needed for a repair are not in stock, it is hard to meet the delivery time. To minimise the risk of components being out of stock, UNIS Group has taken some precautions:

- ▶ UNIS Group has an automated order system for components. When the minimum stock level has been reached, components are automatically ordered from the supplier.
- ▶ All unknown industrial electronics are analysed by our component analysis department. Components that are not in stock are purchased.

UNIS Group has a stock of over 26.000 different components.

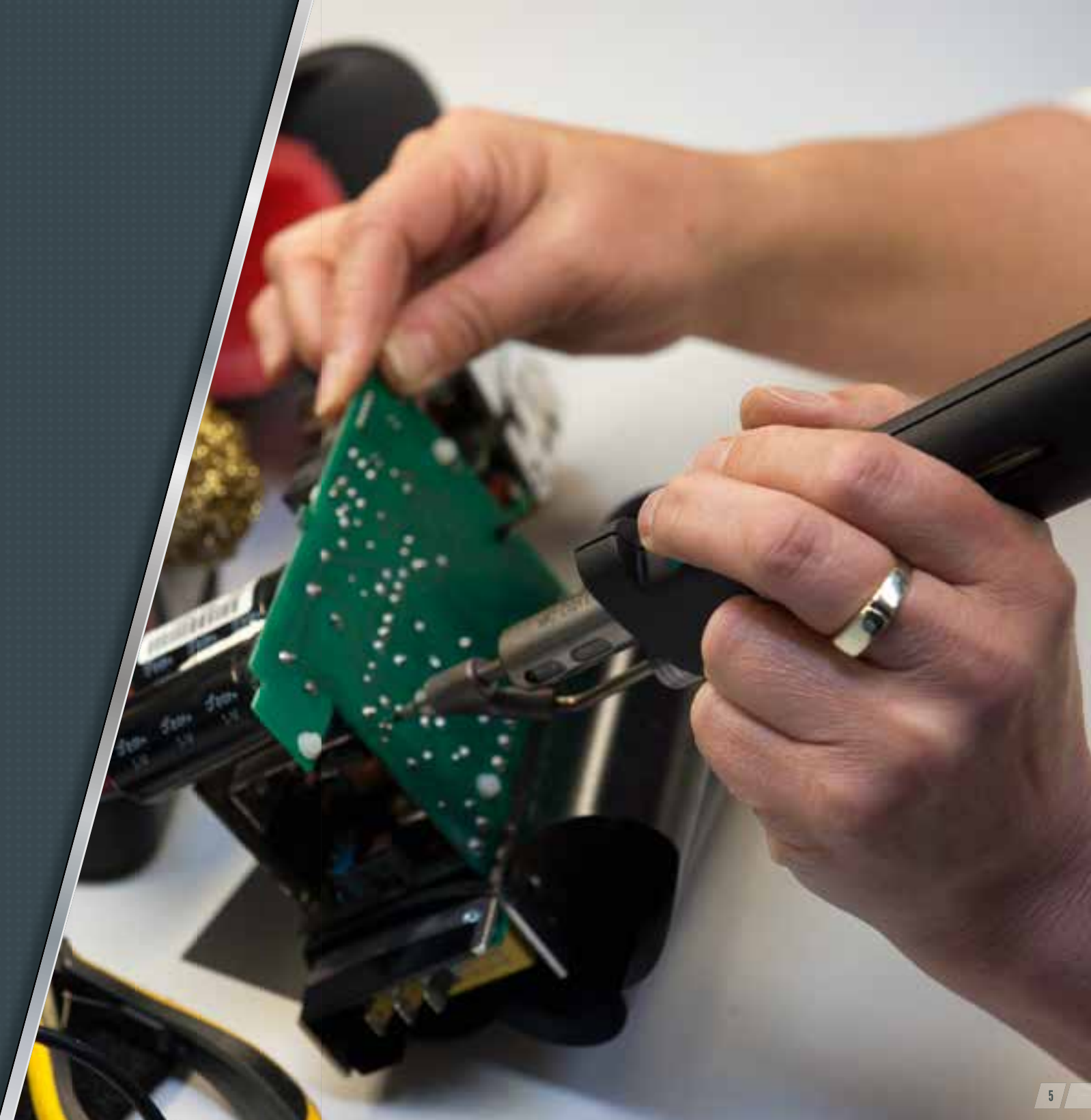
Preventative maintenance

Not only the defective components are replaced during a repair, but also the time critical components are replaced as standard. This significantly minimises the chance of a new defect in the future.

Preventative replacement of time critical components also prevents other components becoming defected and minimises the risk of a final defect on the electronics.

Preventative maintenance is also possible as a separate service. The chance of a production standstill is minimised considerably when your electronics have had a preventative maintenance procedure done on them. Instead of being surprised you can plan the maintenance yourself.

Ask our sales team for the possibilities!





EXCHANGE POSSIBILITIES

Do you have defective parts you want to send to UNIS Group for repair?

You can choose our exchange service if a similar part is available on stock. When you choose an exchange, we will ship the part to you right away. After you have received the working part from us you have one month to send back your defective part to UNIS Group. By choosing our exchange services you shorten your production standstill period.

SALES

Stock > 120.000 spare parts

UNIS Group keeps an extensive stock of spare parts for many well-known brands including: Siemens, Texas Instruments, Lenze, ABB, Mitsubishi, Telemecanique, Kuka, Fanuc, Indramat, Bosch Rexroth, Lauer, Heidenhain, Hitachi, Danfoss, Philips, Allen-Bradley, Modicon, Omron and SEW.

Fast delivery from stock makes it possible to minimise the downtime in your production process. You can view our current stock on our webshop, www.unisgroup.com.

CONTRACT OPTIONS

Our contract options enable us to offer you a customised service. Based on your needs, you and your contact person at UNIS Group decide which form of contract is best suited to your needs and requirements. We will send you a quote based on the list of parts requested by you.

The following options are available:

Response contract

Under this contract, we are available 24/7 in the event of defects. Your job is given priority over all other jobs. As soon as we receive your defective part, UNIS Group will start repairing within four hours.

With a response contract you can reduce / minimise these extra costs.

Stock agreement (Critical stock)

UNIS Group can ensure you the availability of spare parts based on a provided list of your critical stock. The needed spare part can be delivered within 24 hours. For special rates, we can also ensure a faster delivery.

The parts are always available immediately to you for the duration of the agreement. This means that you can minimise the costs involved in an unscheduled production standstill resulting from defective industrial electronics.

The cost of the agreement depends on the listed parts.

Your advantage:

- ▶ Exchanging the defective spare part within 24 hours
- ▶ Minimising your failure costs
- ▶ Postponement of your new investments
- ▶ Longer benefit of your current production line or machine
- ▶ Security of service

You can minimise the costs of production standstill caused by defective industrial electronics. If you are interested, please do not hesitate to contact us to discuss the options.

INDUSTRIAL PROJECTS

UNIS Group has a Research and Development (R&D) Department that's specially established to solve specific technical problems. Our skilled technicians start on their projects in collaboration with the customer. These projects are extremely diverse, with a wide range of industrial applications.

Redesign of existing electronics

UNIS Group produces custom-made (end-of-life) electronics based on your specific needs. This prevents you from having to invest in an entirely new system; instead, we will alter the electronics of your existing trusty machine and ensure that it will remain operational.

If the electronics you need are obsolete, UNIS Group can also conduct a thorough analysis and redesign them for you.

Developing specific test systems

We also build test systems upon request. These allow us to thoroughly test any specific repairs planned for a customer at our R&D department beforehand.

Moreover, a problem sometimes seen with regard to modules is that the connection data and/or controls of the software are unknown. We can develop test for these cases as well, which will make the modules testable.

Do you have a specific project or an issue in your production environment? UNIS Group would be happy to help with a solution. Please feel free to contact us without any obligations. Our technicians are at your service.



TATA STEEL



REPAIR AND TESTING PROCESS

UNIS Group repairs professional and fast. To be able to guarantee this, UNIS Group has established the following repair process.

After we receive the industrial electronics for repair, the electronics are cleaned, if necessary. After cleaning and coming to an agreement of the quotation with the customer, the electronics will be repaired.

The basis for each repair is exchanging time critical components. When the defect is not solved with exchanging time critical components, a comprehensive fault search is carried out to localise the defect.

After finishing the repair, the electronics are tested if possible.

CLEANING

In industrial operating processes, electronics are exposed to dirt, moisture and other 'dangers' that can shorten the lifespan of the equipment. Dirt can also cause problems in the production process and can even affect the end product. Professional cleaning of sensitive components is therefore essential. UNIS Group owns specialized equipment to clean your electronics. If possible the component will be tested after cleaning.

The process in short:

You send the industrial electronics to us.

1. We dismantle the equipment and isolate the components to be cleaned.
2. The 'washing machine' filled with cleaning fluid uses ultrasonic vibrations to separate dirt from the component.
3. We then thoroughly rinse the component in a special bath of demineralised water.
4. The drying time depends on the size of the electronics.
5. The dismantled electronics are reassembled.
6. All electronics cleaned by UNIS Group are carefully tested to guarantee 100% operation.
7. The component is carefully packaged and returned to you.





TESTING

Repaired and sold industrial electronics are, if possible, thoroughly tested. UNIS Group has more than two hundred fifty test systems at its disposal for a wide range of brands and types.

When you are not sure if your industrial electronics are fully functional, UNIS Group can test the electronics for you. When the test results show that the electronic item is defective, you can choose without obligations to let UNIS Group repair it.

The result of the test can also be that the electronics are not defective but the time critical components show signs of usage. In this case UNIS Group will advise preventative maintenance.

EQUIPMENT

In order to offer a professional analysis and repair, our engineers have got professional equipment at their disposal.

We have the following analysing equipment at our disposal:

- ▶ Curve tracer
- ▶ Oscilloscope
- ▶ Multi meter
- ▶ Calibrator
- ▶ Infrared camera

We also have the following repair equipment at our disposal:

- ▶ BGA removal and placement device
- ▶ Hot air device for removal and placement of SMD components
- ▶ Professional solder and de-solder devices

BRAND INDEPENDENT REPAIRS

UNIS Group repairs on board level, that means regardless of the brand, types and series, UNIS Group can repair it for you. UNIS Group has experience with a variety of brands such as:

- | | |
|---------------------|-----------------|
| ▶ Siemens | ▶ Telemecanique |
| ▶ Lenze | ▶ Modicon |
| ▶ ABB | ▶ Allen-Bradley |
| ▶ Texas Instruments | ▶ Fanuc |
| ▶ Philips | ▶ Kuka |
| ▶ Schneider | ▶ Adept |
| ▶ AEG | ▶ Stäubli |
| ▶ Danfoss | |
| ▶ Indramat | |
| ▶ Omron | |

Warranty

You receive at least a one year warranty on all repaired electronics.

PLC REPAIR

UNIS Group has an extensive experience in the repair of the modules below:

- ▶ CPUs
- ▶ I/O modules
- ▶ Power supplies
- ▶ Interface cards
- ▶ Programmer devices
- ▶ Industrial PCs
- ▶ Industrial networks:
 - Profibus
 - Profinet
 - Ethernet
 - ASI-bus
 - Interbus
 - CAN-bus
 - Device Net
 - RS422/485
 - Sercos

Testing

Where possible all connections on the electronics are tested.

Connections such as:

- ▶ Analogue in- and output
- ▶ Temperature inputs
- ▶ Power supply, under power
- ▶ Communication connections
- ▶ Encoders
- ▶ Programmer connections

With CPUs the following tests are carried out:

- ▶ Memory test by loading a program;
- ▶ Memory test by disconnecting the power;
- ▶ Controlling the in- and output modules / communication modules that are connected to the processor, when necessary.



ABB

- ▶ 07KR240
- ▶ Advant
Controller 31
- ▶ Freelance 2000
- ▶ Procontic CS31
- ▶ T200



AEG

- ▶ A120
- ▶ A250



ENDRESS & HAUSER

- ▶ FXN 671
- ▶ NT 471



FESTO ELECTRONIC

- ▶ FPC201



ALLEN-BRADLEY

- ▶ 1756
- ▶ Micrologix 1500
- ▶ PLC5
- ▶ SLC500
- ▶ SLC5000
- ▶ 1771 Bulletin
1771 universal I/O



B&R

- ▶ NT40
- ▶ NT43



FISHER ROSEMOUNT

- ▶ Delta V



GE FANUC

- ▶ 90-30
- ▶ 90-70
- ▶ Genius
- ▶ Series Five



BOSCH REXROTH

- ▶ PG1220 Series



EBERLE

- ▶ PLS 511



HITACHI

- ▶ EC
- ▶ EC2
- ▶ H250



HONEYWELL

- ▶ IPC 620-30
- ▶ IPC 620-20
- ▶ IPC 620-25
- ▶ IPC 620-35
- ▶ IPC 621



IDEC

- ▶ FA1
- ▶ Micro-1



KLÖCKNER MOELLER (EATON)

- ▶ Suco Control
- ▶ PS316-PS22-PS24
- ▶ Winbloc



OMRON

- ▶ CPM1A
- ▶ CQM1
- ▶ CQM1H
- ▶ Sysmac C 200 HE
- ▶ SYSMAC C20
- ▶ Sysmac CVM1
- ▶ Sysmac CV500
- ▶ Sysmac CV1000
- ▶ Sysmac CV2000
- ▶ I/O modules for CV CPU



ALFA LAVAL

- ▶ Various



LANDIS & GYR

- ▶ PCAO



MITSUBISHI

- ▶ Alpha
- ▶ Melsec A
- ▶ Melsec F
- ▶ Melsec Q



PHILIPS

- ▶ P8 Compact line
- ▶ P8 Rack line
- ▶ PC20



PHOENIX

- ▶ Interbus



MODICON

- ▶ A120
- ▶ A984 Gould



MODICON/TELEMECANIQUE

- ▶ TSX Micro
- ▶ TSX Quantum



SAIA

- ▶ PCD
- ▶ PCD1
- ▶ PCD2
- ▶ PCD4
- ▶ PCD6



SATTCONTROL/SATTCON

- ▶ PBS Micro
- ▶ SC15-20
- ▶ Slimline



SCHNEIDER

- ▶ SR3
- ▶ TSX Premium
- ▶ TSX Compact
- ▶ TSX Quantum



SPRECHER + SCHUH

- ▶ SEStep



TELEMECANIQUE

- ▶ TSX 7
- ▶ TSX 17
- ▶ TSX 27
- ▶ TSX47
- ▶ TSX DET/TSX DST



SIEMENS

- ▶ ET200B
- ▶ ET200C
- ▶ ET200Eco
- ▶ ET200ISP
- ▶ ET200L
- ▶ ET200pro
- ▶ ET200R
- ▶ ET200S
- ▶ ET200U
- ▶ ET200X
- ▶ Logo
- ▶ S5- 6GK communication modules
- ▶ S5- IP modules
- ▶ S5-100U
- ▶ S5-110A
- ▶ S5-110S
- ▶ S5-115U
- ▶ S5-130W
- ▶ S5-135W
- ▶ S5-150U
- ▶ S5-155U
- ▶ S5-90U
- ▶ S5-95U
- ▶ S5-WF modules
- ▶ S7-200
- ▶ S7-300
- ▶ S7-400
- ▶ S7-1200
- ▶ S7-1500
- ▶ ET200SFC
- ▶ Programmiers
- ▶ Siplus
- ▶ PROFIsafe



TI (TEXAS INSTRUMENTS)

- ▶ 305 (Koyo)
- ▶ 405 (Koyo, Direct-Logic)
- ▶ 500
- ▶ 505
- ▶ 530
- ▶ 560
- ▶ 565
- ▶ 5TI
- ▶ PM550
- ▶ VPU200



WAGO

- ▶ 750



HMI REPAIR

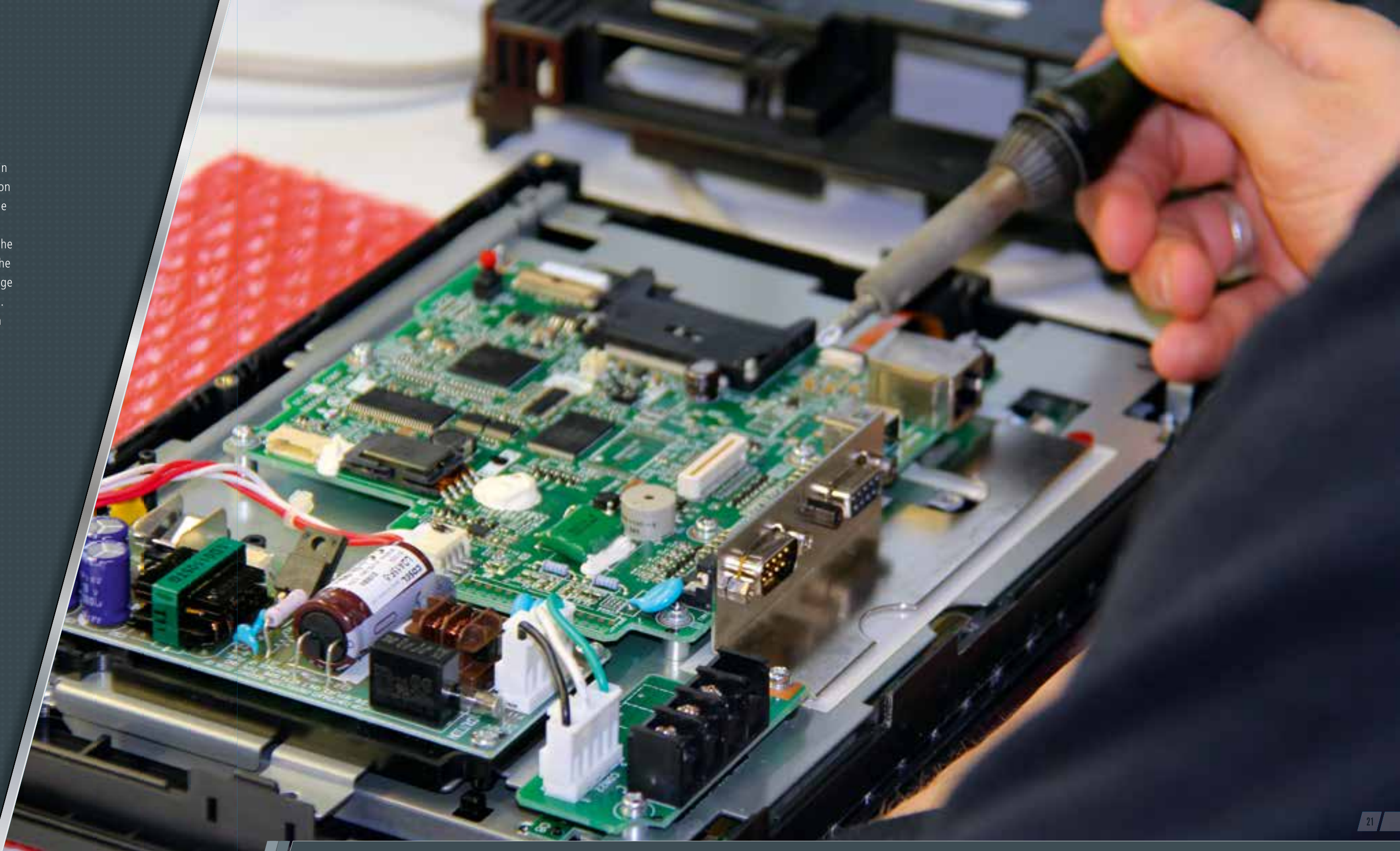
UNIS Group has an extensive experience in repairing operator and touch panels. Buying in new HMIs often results in changing installation dimensions. You don't have this problem if the defective item is repaired. That is why UNIS Group offers a wide range of possibilities in the repair of HMIs. UNIS Group doesn't only fix the defective electronics, but also has a wide range of foils and displays on stock for replacement. If the original foil is not available anymore an in-house developed replacement foil is used.

Testing

After the repair the electronics are carefully tested, if possible. You will receive at least a one year warranty on the repair.

Testing consists of the following activities:

- ▶ Testing of the button or touch screen
- ▶ Testing of the monitor
- ▶ Testing the communication connections
- ▶ Testing I/O modules, when installed



SIEMENS

- ▶ OP
- ▶ MP
- ▶ TP



ALLEN-BRADLEY

- ▶ Panelview



UNIOP

- ▶ CP



PROFACE

- ▶ Quickpanel



TI (TEXAS INSTRUMENTS)

- ▶ Various



PILZ

- ▶ Pitouch



LAUER/BEIJER

- ▶ PCS



ALFA LAVAL

- ▶ OP



FREQUENCY DRIVES AND SOFT STARTERS REPAIR

UNIS Group has repaired frequency drives and soft starters for several years. We have a lot of experience in repairing different brands, types and series, from the oldest to the latest models.

UNIS Group has an extensive test centre where if necessary, we can test by high and continuous power up to 110 kW. You will receive a warranty of at least one year.

Testing

Testing frequency drives and soft starters consist of:

- ▶ Testing communication connections;
- ▶ Testing operator panels, when installed;
- ▶ Testing the control input digital and analogue;
- ▶ Testing under nominal power using three test facilities, where UNIS Group can test 18 frequency drives at the same time;
- ▶ Testing under nominal power using one test facility, where we can test DC drives at the same time;
- ▶ Simodrive 611 are tested in a three day endurance test by high and continuous power up to 110 kW. This is a complete function test. Test reports are available.



ABB

- ▶ ACS
- ▶ ACV 700



AEG

- ▶ Microsemi
- ▶ Minisemi



KEB

- ▶ Combivert



KLÖCKNER MOELLER (EATON)

- ▶ DOL
- ▶ RA



REFU

- ▶ RD52



mitsubishi

- ▶ MR-J2
- ▶ A200



LENZE

- ▶ 7800
- ▶ 8200
- ▶ 9300
- ▶ SMD



OMRON

- ▶ Sysdrive



CONTROL TECHNIQUES

- ▶ UNIDRIVE
- ▶ Comander



DANFOSS

- ▶ VLT



AXOR

- ▶ MS Minispeed (MS)
- ▶ MTS Masterspeed (MTS)

PHOENIX CONTACT

- ▶ IBS IP 400
- ▶ IBS IP 500

SEW

- ▶ Movidyn
- ▶ Movitrack
- ▶ Movidrive



SCHNEIDER ELECTRIC

- ▶ Altivar 71



YASKAWA

- ▶ CiMR



SIEMENS

- ▶ EM 300
- ▶ Micromaster
- ▶ S110 Sinamics
- ▶ S120 Sinamics
- ▶ G110 Sinamics
- ▶ G120 Sinamics
- ▶ Simodrive
- ▶ Simovert
- ▶ Simovert Masterdrive MC/VC/FC
- ▶ Simovert P
- ▶ Simovert PM
- ▶ Simoreg
- ▶ Sinamics
- ▶ Softstarter
- ▶ 3RW3



TELEMECANIQUE

- ▶ Altivar



REO ELEKTRONIK

- ▶ Reovib MFS 268
- ▶ Reovib MFS 168



VACON

- ▶ 10/20/100
- ▶ CXS
- ▶ NXC
- ▶ NXL
- ▶ NXS
- ▶ NXP



SERVO DRIVE REPAIR

UNIS Group has a broad experience in the repair of servo drives. The functionalities below are a part of the repair:

- ▶ Power supply
- ▶ Interface modules
- ▶ Positioning modules
- ▶ Industrial networks
- ▶ Feedback
- ▶ I/O

Testing

After the drive is repaired, it will be tested if possible. You will receive at least a one year warranty on the repair. Testing a servo drive consists of:

- ▶ Testing of interface modules;
- ▶ Testing of communication connections;
- ▶ Testing nominal power, when we have the motor at our disposal. If the motor is not available the drive is partially tested;
- ▶ Testing the feedback of the drive using an encoder simulator;
- ▶ Testing of I/O, when installed.



ATLAS COPCO

- ▶ DMC



BERGER LAHR

- ▶ WD



SIEMENS

- ▶ Simodrive 610
- ▶ Simodrive 611
- ▶ Simodrive 650
- ▶ Simodrive 660
- ▶ Simodrive 690
- ▶ Sinamics
- ▶ Posma A



BAUMÜLLER

- ▶ BUS 3
- ▶ BUS 6 VC
- ▶ Analog
- ▶ Digital



INDRAMAT (BOSCH REXROTH)

- ▶ ANAX
- ▶ DIAx 1
- ▶ DIAx 2/3
- ▶ DKR
- ▶ Ecodrive 01
- ▶ Ecodrive 03
- ▶ Indradrive
- ▶ RAC
- ▶ DIAx 4



ABB

- ▶ DKR
- ▶ SDS100
- ▶ Microflex
- ▶ Motiflex



KOLLMORGEN/SEIDEL

- ▶ 60WKS



MITSUBISHI

- ▶ MELSERVO SA



BOSCH

- ▶ VM60
- ▶ Servodyn-T



ALLEN-BRADLEY

- ▶ 1391
- ▶ 1394
- ▶ Kinetix 6000
- ▶ Powerflex 40
- ▶ IMC S Class 4100-234



FERROCONTROL

- ▶ Darc system



B&R

- ▶ Acopos



FANUC

- ▶ Alpha i
- ▶ Spindle drive
- ▶ Alpha A
- ▶ Alpha iS



ELAU

- ▶ PacDrive M



PARKER

- ▶ Digiplan BLH
- ▶ Digiplan BLX 150
- ▶ SSD CPX2500

LUST

- ▶ VF1000 Series M
- ▶ Mastercontrol MC 6000
- ▶ Mastercontrol MC 7000



YASKAWA

- ▶ Varispeed-626m5
- ▶ Varispeed-656mr5



REOTRON

- ▶ 543LH/567LH



ROBOT ELECTRONICS REPAIR

UNIS Group has experience in repairing:

- ▶ Power supplies
- ▶ Teach pendants
- ▶ Servo drives used in robot electronics
- ▶ Processor boards
- ▶ Servo processor boards
- ▶ Safety boards
- ▶ System I/O boards
- ▶ Network interface boards
- ▶ Servo motors

Testing

After the repair is done, electronics are tested, if possible. You will receive at least a one year warranty on the repair. Testing of robot electronics consists of:

- ▶ When possible the robot control electronics are tested in the official control units
- ▶ Testing high power modules under nominal power
- ▶ Testing of teach pendants
- ▶ Testing of I/O modules
- ▶ Testing of interface modules
- ▶ Testing of safety modules



ABB

- ▶ IRC5 (3x)
- ▶ S2 (3X)
- ▶ S3 (2X)
- ▶ S4 (2X)
- ▶ S4C (2X)
- ▶ S4C+ (2X)



ASEA

- ▶ S2



MOTOMAN

- ▶ XRC



STÄUBLI

- ▶ CS8C TX60L



ADEPT

- ▶ 840
- ▶ Adept One MV
- ▶ Cobra 600
- ▶ Cobra 600 AIB
- ▶ Cobra S650
- ▶ Viper S650



BOSCH

- ▶ SR60



YASNAC

- ▶ MRC



REIS

- ▶ SRV 16L IRT 40XX
- ▶ SRV 6 IRT 14XX



FANUC

- ▶ R-J (2X)
- ▶ R-J2 (2X)
- ▶ R-J3 (2X)



KUKA

- ▶ KRC1 (2X)
- ▶ KRC2 (2X)
- ▶ RC22/42
- ▶ RC30/51
- ▶ RC50/52
- ▶ VKRC1



CNC ELECTRONICS REPAIR

UNIS Group has extensive experience in repairing CNC control units. The functionalities below are part of the repair process:

- ▶ Power supplies
- ▶ Control units
- ▶ Operator panels
- ▶ Interface boards
- ▶ Positioning modules
- ▶ Industrial networks
- ▶ Feedback
- ▶ I/O

Testing

When the repair is completed the CNC control unit is tested, if possible. You will receive at least a one year warranty on the repair.

The testing consists of:

- ▶ Testing communication connections
- ▶ Testing parameter memory
- ▶ Testing I/O, when installed
- ▶ Testing monitors in combination with the control unit
- ▶ Testing safety boards
- ▶ Endurance tests
- ▶ Testing extra encoder input connections with an encoder simulator



FANUC

- ▶ ALPHA 16
- ▶ ALPHA 18
- ▶ ALPHA 21
- ▶ ALPHAi 16i
- ▶ ALPHAi 18i
- ▶ ALPHAi 21i
- ▶ Serie 0
- ▶ Serie 15
- ▶ Serie 6
- ▶ Series 16 T
- ▶ Series 21I-TB



HEIDENHAIN

- ▶ iTNC530



SIEMENS

- ▶ 802D sl
- ▶ 840C
- ▶ 840D
- ▶ 840D sl
- ▶ Posmo
- ▶ Sinumerik
- ▶ Sinamics



REPAIR OF SPECIALS

Repair process:

After we receive the industrial electronics for repair, the electronics if necessary are cleaned. After cleaning and receiving an agreement of the quotation from the customer the electronics will be repaired.

The basis for each repair is exchanging the time critical components. Then we exchange the components that are prone to malfunctions, according to the experience of our specialists. We carry out a comprehensive fault research to find the defect. Once the repair has been completed, we partially or fully test the electronics.

Specials can be a wide variety of industrial electronics such as custom made electronics, electronics that are unknown and without any information or electronics that have been modified.

Our specialists ensure a professional repair. The testing of specials is carried out on component level with an oscilloscope and curve tracer.

SERVO MOTOR REPAIR

This department of UNIS Group is specialized in the repairs, refurbishing, adjustments and tests of servo motors.

Servo motors repair process

After cleaning the motor and diagnosing the defect you will receive an obligation free quote. The standard repair consists of replacement of the bearings and cleaning/ refurbishing of the housing if needed. Depending on the defective parts, after diagnosis, the following parts will be repaired/replaced:

- ▶ Feedback in the form of an encoder / resolver / tacho
- ▶ Brake
- ▶ Balancing the rotor
- ▶ Housing
- ▶ Refurbishing of damaged rotor shafts
- ▶ Fans
- ▶ Transmission

Testing

Testing servo motors consist of:

- ▶ Measuring / meggering the winding
- ▶ Testing the magnetism
- ▶ Testing torque of the motor when standing still
- ▶ Testing the brake
- ▶ Testing the feedback using several encoder testers
- ▶ Testing if the shaft is running smoothly
- ▶ Testing under load of a large amount of repair servo motors



ABB

- ▶ 3HAB
- ▶ 3HAC
- ▶ 3HNM
- ▶ 8C
- ▶ 9C
- ▶ HDP
- ▶ Serie 4 and 5



ALLEN-BRADLEY

- ▶ 1326 AB
- ▶ MPL
- ▶ MPF



LENZE

- ▶ MC09F
- ▶ MCS
- ▶ MDS
- ▶ MDF
- ▶ MCA



SEW

- ▶ CFM
- ▶ CMD
- ▶ CMP
- ▶ DFS
- ▶ DFY
- ▶ KH
- ▶ PSF



BAUMÜLLER

- ▶ DSOG
- ▶ DSG
- ▶ FLI
- ▶ DSM



BOSCH/INDRAMAT

- ▶ 2AD
- ▶ MAC
- ▶ MDD
- ▶ MHD
- ▶ MKD
- ▶ MSK
- ▶ MMD



SIEMENS

- ▶ 1FK
- ▶ 1FK7
- ▶ 1FT
- ▶ 1FT5/6/7
- ▶ 1HU
- ▶ 1PH
- ▶ Posmo



KUKA

- ▶ 1FK60
- ▶ 1FK61
- ▶ 1FK71



FANUC

- ▶ Alpha
- ▶ Alpha i(S)
- ▶ Beta
- ▶ BETAi



KEB

- ▶ 42SM
- ▶ 53SM
- ▶ C2SM001
- ▶ D3SM
- ▶ E4SM



NUM

- ▶ Servomac
- ▶ Flexium(+)



PANASONIC

- ▶ MSM



BALDOR

- ▶ BSM



BERGER LAHR

- ▶ VRDM



MITSUBISHI

- ▶ HC-SFS
- ▶ HC-MFS



CONTROL TECHNIQUES

- ▶ Unimotor FM
- ▶ Unimotor HD



PARKER

- ▶ Various



DEMAG

- ▶ Various



FESTO

- ▶ EMMS



SCHNEIDER ELECTRIC

- ▶ Lexium



KOLLMORGEN/SEIDEL

- ▶ AKM
- ▶ 6SM



SSD EURO THERM

- ▶ Various



B&R

- ▶ 8MSA
- ▶ 8LSA



OMRON

- ▶ R7
- ▶ R88



YASKAWA

- ▶ SGMG
- ▶ SGMAH
- ▶ SGMGH
- ▶ USAGED



MAVILOR

- ▶ BS
- ▶ BLS

ATLAS COPCO

- ▶ AHD

ELAU

- ▶ SB/SH/SM



KRONES

- ▶ ISD401





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