

# met



Automation



Instrumentation



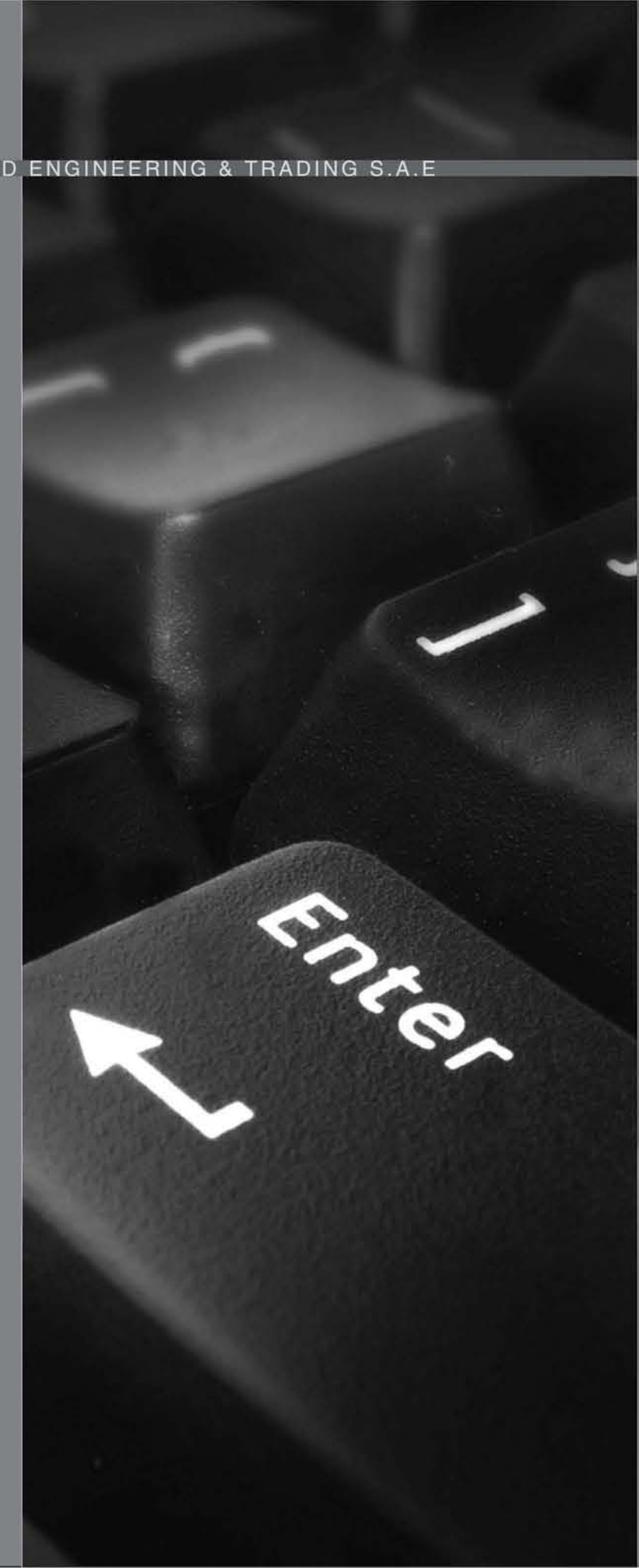
Power transmission



Control relays & panels

**INDEX**

THE COMPANY	02
TOSHIBA PLC	04
TOSHIBA HMI	04
TOSHIBA DCS	04
TOSHIBA FLOW METER	06
TOSHIBA DENSITY METER	06
TOSHIBA FREQUENCY INVERTER	07
TOSHIBA SOFT STARTER	07
HIQUEL PLC	08
HIQUEL INDUSTRIAL PC	09
HIQUEL HOME AUTOMATION	10
HIQUEL NETWORK DEVICES	10
HIQUEL CONTROL RELAY	11
HIQUEL TIMER & PROTECTION	11
HAKKO HMI, TOUCH SCREEN	12
INDUSOFT SCADA SYSTEM	13
ESCO COUPLING	14
ESCO SOFT STARTER	15
LUST SERVO DRIVE	16
LUST SERVO MOTOR	17
REICH COUPLING	18
ELECTO ADDA AC MOTOR	20
SICMEMOTORI DC MOTOR	21
SICMEMOTORI VECTOR MOTOR	21
VARVEL GEAR BOX & MOTOR	22
CORBETTA CLUTCH & BRAKE	23
SAEL DC DRIVE, REBORN	24



## The Company

Experience and high responsiveness  
Year 2001 is not only a date for ALMAWARED ENGINEERING AND TRADING S.A.E (M E T).

It represents the starting of a company that is today specialized in the industrial automation, mechanical and electrical power transmission field, thanks to the entrepreneurial capabilities from foundation members Ms. Bahia Khairy, Eng. Mohamed Abdel Aziz, Eng. Khalid Abdel Aziz and Eng. Khalid Ateya, expertise and firm commitment of the promoting partners.

MET partners achieved the quality certificates, with the aim to grant a good quality system for the different market needs to satisfy mostly of its customers' needs by providing complete solutions or individual tailor-made solutions. Only a long experience allows a company to reach in a flexible and wide way to market demands, with a complete range of products and services.

## Training Center

MET, Training center offers a training service so that you can plan over the time the growth of the device knowledge, from the frequency inverters to the soft starters for asynchronous motors up to the PLC "Programmable Logic Controller"; Touch screens and SCADA system. Courses are targeted to engineers, technicians, users and installers and to the service personal as well. MET suggests courses that are mainly oriented to the use of the drives and of the automation system.

## Flexibility and rapidity of product range

Our structure is composed of real problem solvers who study the customer requirements and orient him towards simple and innovative solutions thanks to the structure of MET product range that gives our highly professional technical engineers a wide area of solutions. MET product range comprises a whole variety of automation, electrical and mechanical equipment such as PLCs, touch screens, SCADA systems, flow meters, density meters, BMS components, inverters, soft starters, AC/DC motors, Servo systems, gearboxes, clutches and brakes. Distributed Control System (DCS) is the latest product that MET provides to our customers

## A strong presence in the market

Our experienced sales and marketing team is highly technical and customer-oriented. They combine premium customer support with years of industry experience to develop and sustain long-term relationships. Our team ensures each customer is treated with professionalism and integrity as we work hard to understand our customers' needs in order to provide solutions that meet those needs, so we serve a wide variety of market fields such as soap and fats, sugar industries, petroleum and refineries, cement factories, iron and steel mills, pharmaceuticals and cosmetics, textiles and dyeing, paints and chemicals, plastics and petrochemicals, food & beverages industries, paper and printing, packing and wrapping, pump & water treatment plants, sewage, water treatment plants and commercial HVAC.



## Process Control

### PLC (Programmable Logic Controllers)

TOSHIBA has a wide range of powerful PLCs starting from the micro programmable controller V200 and T1-16S ending with the NV series going through the S2E and V series. Its communication capability, advanced instruction set, large memory (program & data register) and high I/O capacity make it ideally suitable for all control applications.

### Text and Touch screens (Panels)

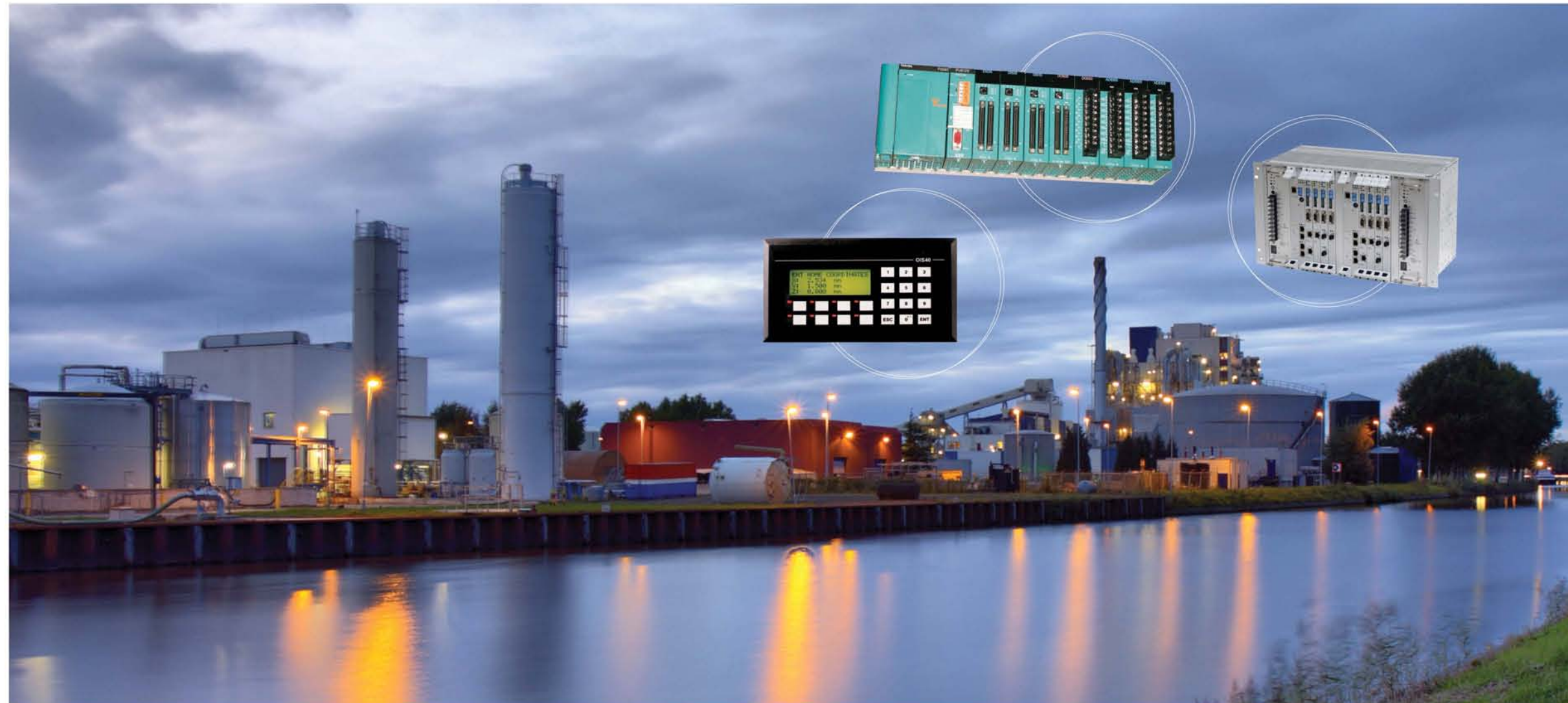
TOSHIBA text and touch screens starting from OIS10 text screens up to OIS120 touch screens are economical operator interface stations. Fortunately, Toshiba PLCs have additional power and memory capacity that make OIS screens very powerful operator interface stations.

### DCS and PLC Integrated Systems

TOSHIBA Distributed Control System (DCS) aims to control a manufacturing system, process or any kind of dynamic system in which the elements are not central in location (like the brain) but are distributed throughout the system. The entire system of controllers is connected by networks for communication and monitoring. What distinguishes TOSHIBA DCS system from others are its high speed processing, Multi-control loops, reliability, redundant server, high I/O capacity and many extra features. TOSHIBA DCS is established using the V-series or the brand new NV-series PLCs along with OIS-DS software. This software works under Windows XP as it is powerful yet also familiar and easy to use.

### Hybrid Integrated Control Platform

TOSHIBA OIS-DS extensive monitoring and operation functions ensure an advanced operation environment. Monitoring screens have a hierarchical (or top down) design where the user starts from higher level screens and moves to the screens lower in the hierarchy in order to find the information to be monitored. Related data, alarms and trends can be quickly displayed. Multiple monitoring screens are linked for display purposes, so that information can be monitored and analyzed from several perspectives.



## Instrumentation and speed drives

### Electromagnetic Flow Meters

Electromagnetic Flow Meters are instruments for measuring the flow of conductive fluids, using Faraday's principle of electromagnetic induction. Toshiba has been marketing electromagnetic flow meters since the late 1960's.

TOSHIBA has different types of flow meters depending on the mounting type, lining material, electrode material, detector material body and range of sizes (25 mm up to 3000 mm). This wide range of types makes possible fluid measurements in almost any imaginable application.

### Microwave Density Analyzers

Density (Consistency) Meters, also known as Microwave Analyzers, use a new measurement technique which is based on the way solids affect the propagation of microwaves compared to all other ingredients in the pipe, and thus, the unit is solely specific to the percent solids in the pipe.

Both TOSHIBA electromagnetic flow and density meters have HART (Highway Addressable Remote Transducer) protocol which is a communication protocol for industrial sensors recommended by HCF (HART Communication Foundation). Also both of them are ISO9001 and ISO14001 certified with FCC, CU and UL approvals.

### Frequency Inverters

If you need the most suitable inverter for any application which has low noise, low harmonics, minimal parameter setting, high torque and control, just get TOSHIBA frequency inverters!

TOSHIBA frequency inverters are designed for the global market and are manufactured with the newest production methods. they are extremely reliable and meet highest quality standards. Capacities from 0.1 to 630 kW .

All models can be mounted side-by-side and tolerate high ambient temperatures up to 60°C. It has outstanding performance, including high torque, fast response, high accuracy and excellent environmental compatibility with easy operation.

### Soft Starters

TOSHIBA Electronic soft starting is the most advanced form of reduced voltage and current starting. The technology offers superior control over starting current and torque for applications such as pumps and conveyors, braking for reducing deceleration times. The main advantages of the soft starter are the motor and load full protections such as programmable electronic motor overload for advanced motor protection, phase imbalance /loss / rotation , stall protection to prevent damage from jammed loads, undercurrent protection to detect abnormal load conditions, thermistor input for direct connection of motor thermistors, restart delay, shorted SCR detection and automatic power circuit verification.



Since foundation in 1992 based in Austria, HIQUEL has specialized in the development and production of products for industrial automation.

It Owns an engineering division for project realization in the fields of industrial automation and building management systems. HIQUEL, stands for High Quality Electronics, provides individual tailor-made products or complete solutions.

**Research is HIQUEL strong point**

The know-how, entirely belongs to HIQUEL. The products high quality and innovation come out of a deeply developed research, that's why HIQUEL has a wide product range.

**PLC (Programmable Logic Controllers)**

Basically, there are two different PLC-series in HIQUEL product range, the SLS-86 and the SLS-500. Both are modular concepts and can be used as central and/or distributed PLC systems. Due to the fact that a base module can be combined with a broad range of expansion modules, both PLC series are very flexible and can therefore fit Individual demands. The modules could be digital, analog, Pt 100/Pt 1000, thermocouple or encoder detector "High speed counter".

The SLS-86 and the SLS-500 are programmed without special software knowledge. Easy online visualization and simulation of functions are integrated in the software. the SLS500 can be connected to an internal RS485 network in an easy and effective cost.

**Industrial PC**

It is the principle of compact design in industrial PC technology. The system is compatible with any software package and suitable for any application. It is the ideal platform for HMI and SCADA applications. the modular design and the various sizes 12" up to 21" guarantee you a maximum in configuration and a various selection of different options with all reasonable characteristics. For the use in industrial environments, we have already integrated base and acid resistant, IP65 NEMA4,...etc.



FACTORY AUTOMATION



## Networking and Building Automation

Why do we need a Building Management System?

HIQUEL offers both, technical and commercial advice for the modern building automation solution, the BMS is a computer based control system installed in buildings that controls and monitors the buildings mechanical and electrical equipments such as heating, air conditioning, fire systems and security systems with access control and video surveillance. Such buildings are factories, compounds, schools or individual buildings as it saves energy and costs.

HIQUEL offers a wide variety of components used to set up a complete and integral management system whether on a small scale (Home Automation) or on a large scale (BMS). Monitor and check your facility via SMS.

The SMS-master controller offers a low cost solution for monitoring and controlling systems via SMS. It's a flexible alarming and messaging system that receives and sends messages to mobile phones. It automatically generates reports of machine operating states, such as breakdowns. Incoming text messages can control functions and interrogate I/O status using digital, analogue or time events.

### Networking devices

Ever had a problem connecting devices with different communication protocols?! HIQUEL just has a complete solution with its network converters and devices covering all communication protocols such as RS-232C, RS-485, RS-422, Ethernet, Profibus, Modbus ...etc.

## Control Relays

Monitoring, Controlling, Timing & Signal Converters

Customer demands placed on today's control systems mean ever more complex control requirements but at the same time often place limits on the amount of space available.

HIQUEL's solution is the new in-case series, an integrated range of industrial monitoring and timing relays in a new, compact case. Designed with the emphasis on flexibility and incorporating a new microcontroller.

Monitoring relays:

Speed control – liquid level control - thermistor protection - under/over volt and current – phase failure/sequence /asymmetry.

Timing relays:

Star delta timer - multifunction with multi voltage timer - two separate multifunction timer on/off/asymmetrical/pulse timers - true off delay timer without supply voltage

Signal converting relays:

PLC interface relay, 24/110/240 Vac/dc - Pt100 and Pt1000 temperature transducers - thermocouple temperature transducers J,K,T,R,S,B - strain gauge sensor transducers analog voltage and current simulator - diode arrays



## Human Touch technology for the future

Twenty two years have passed since Hakko introduced the MONITOUCH series to production sites, changing the concept of HMI; operator interface panels. Superior-quality MONITOUCH with high connectivity and expandability were developed for more user-friendliness.

MONITOUCH carry a newly developed high-speed accelerator and high-speed algorithm, as well as TFT liquid crystal displays. The display has a high level of visibility, which makes it easy for the operator to grasp the situation. Equipped with predefined component parts and functional switches that are free from macro or PLC ladder programs and they also meet the needs for a large memory capacity.



Hakko seeks to achieve high usability, realistic image display, high accessibility and expandability. Innovative production and further integration of production sites and offices are Hakko hallmarks.

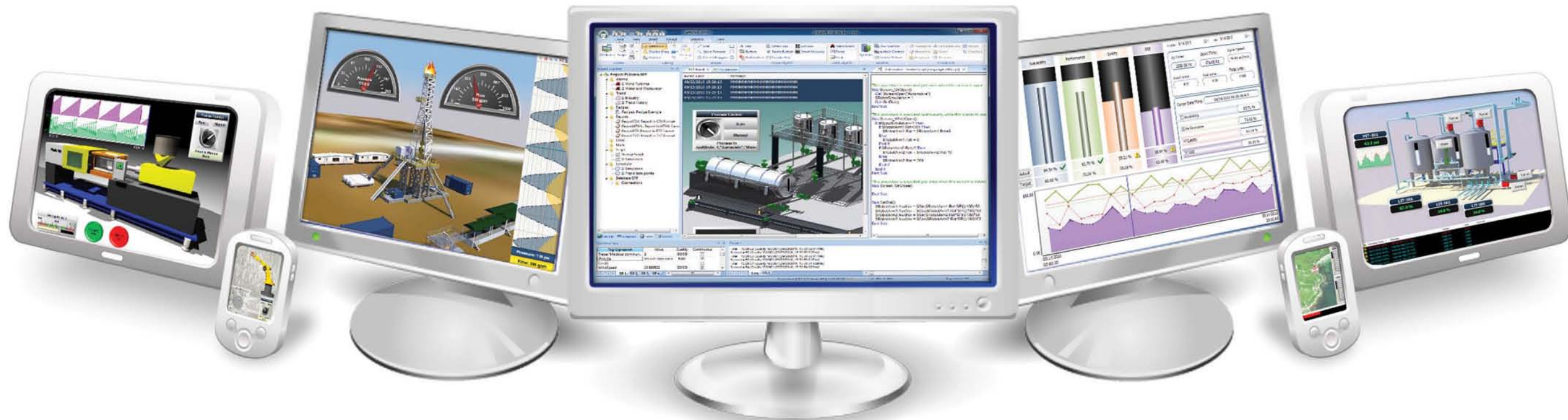
## User friendly & Powerful SCADA System

Knowledge Is Power; InduSoft SCADA Web Studio

is the ideal Rapid Application Configuration Environment (RACE) solution for your industry. It Offers solutions to configure, manage and monitor the flow of valuable information among the plant-floor, the users (local or remote visualization) and the enterprise. You can choose between more than 200 communication drivers available for different devices (e.g. PLCs).

Using IWS SCADA web studio, you can publish real-time dynamic and animated graphic screens, trends, alarms, reports, and recipes to local PCs or standard Web browsers.

Simplified development can be made using full-featured screen objects and dynamics with extensive symbol library and an advanced math library with more than 100 standard functions, with customizable object properties such as: bar graphs, color, resizing, blinking, animation, scale, fill, positioning, rotation, commands, hyperlinks, combo-boxes, and text input/output. A sophisticated alarm system can also be developed to send alarms to screens, email, browsers or to the printer and allow users to write comments after acknowledgment of alarms.







The name ESCO ANTRIEBSTECHNIK GMBH is closely connected with modern concepts of electrical and mechanical drives. ESCO know-how of over 50 years, bundled in the four independent companies of the esco group and the long-standing cooperation with renown national and international suppliers are the basis and guarantee for innovative, economic systems for a vast variety of applications.

**ESCO COUPLINGS**

Esco Couplings N.V. Belgium accumulated field experiences over the last 50 years, hand in hand with customers, amongst the world five first leading industrial flexible gear & disc types coupling manufacturers. Continuous investments in R & D - Engineering - Manufacturing - Quality control and Services Divisions have allowed the company to supply the "most adapted" coupling for the "job" to many major customers. Esco Couplings N.V. is an ISO 9001 Quality certified company.

Esco Couplings have been chosen to connect the most demanding applications, such as Bogie traction motors for train and underground cars, steel and non-ferrous rolling mills, Turbines, compressors and boiler feed pumps, Packaging & processing machines, etc...

**ESCO SOFT STARTER**

The escostart is a soft starter that sets new standards for motor control. The adaptive acceleration control determines the properties of motor and load within few starts. Subsequent starts and stops are performed according to the selected characteristic (early, constant, late acceleration, deceleration). The function provides ideal control of drives with high inertia or different pump head heights.

escostart has a Maximum reliability and protective functions that prevent improper operation conditions and warn or trip in case of over-current, under-current, excess start time, over-temperature, phase loss, phase imbalance and many others. A reset can be performed automatically after an adjustable waiting time. The emergency function ignores trip causes. The sophisticated thermal motor model makes it possible to react to increased load even before the motor is over-heated. Nine types of parameter presets cover the requirements of most standard applications and the 99 past events give the maximum reliability.





Technologies that move the world.



### Your search is over!

The Lti group develops, manufactures and distributes products in three areas: Drive and Automation Technology (servo drives and motors), Microsystems Sensor technology and Renewable Energies. The Lti head offices are in Lahnau, where Karl-Heinz Lust in 1971 established the propulsion technology company "Lust Antriebstechnik". His family business has developed since then into a successful global group of companies. In 2008 the name was changed to Lti (LUST TECHNOLOGY INTERNATIONAL) to reflect the company's dynamic growth.

The modularity of the servo drive guarantees your optimum integration into the machine process at all times. A coordinated single-axis and energy-efficient multi-axis system meet the needs of any application across a wide power range. Whether in high speed field bus communication with the central multi-axis machine controller or with distributed Motion Control intelligence in the drive controller.

Based on the new winding technology, the so-called concentrated winding, the new LSH Servomotor generation of motors improves power density by between 30% and 70% relative to conventional technologies. For the user, that means as much as a 100% improvement in dynamics, and more compact installation combined with smooth running.

The special benefit for users of Lti servo drive controllers and servo motors lies in the expert solutions delivered for automation with electric drives and in the high level of control engineering know-how available to handle the control of a wide range of motor types.





Our drive is our strength. Your strength is our drive.

For more than 60 years already, REICH-KUPPLUNGEN in Bochum – Germany has produced a wide range of torsionally flexible Couplings. All power transmission elements are manufactured on ultramodern production facilities. In-house test benches and inspection facilities of highest technical standards warrant high-quality and long-life power transmission products of the REICH-KUPPLUNGEN brand.



REICH-KUPPLUNGEN offers products for a wide range of applications. Our highly flexible couplings are predominantly used in conjunction with combustion engines on waterways, roadways and railways. In the fields aggregate construction, conveying engineering and general mechanical engineering. Our flexible and torsionally rigid couplings find their applications at all places where high demands for quality, safety and long life are imposed. One of the outstanding features and essential quality factors is our in-house development and manufacture of elastomeric elements.



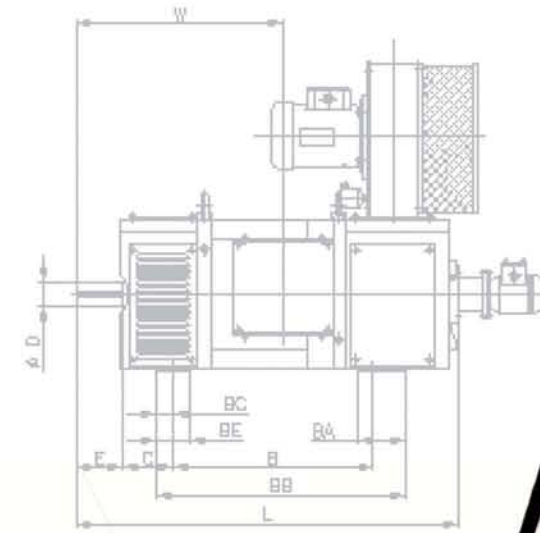


WE MOVE WHEN OTHERS STOP

## A Company Which Goes Beyond Common Standards

ELECTRO ADDA has been producing solely electric motors for every kind of industrial sector and special demanding applications for over 60 years. In the field of electric motors, Electro Adda means "MADE IN ITALY". It represents a historical and influential reality which follows very precise values created and developed by a family management which goes on nourishing a true passion towards this business.

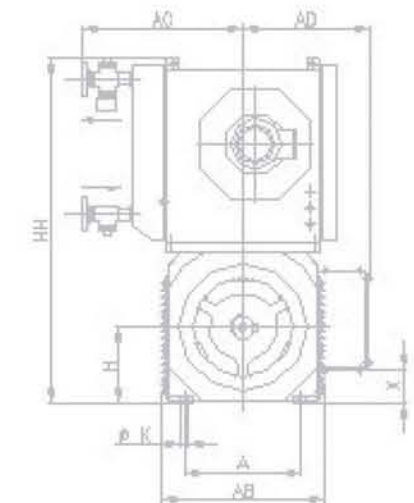
Electro adda produces motors which go from small outputs to higher outputs, 2000kW and more. One of the biggest strengths is its ability to produce motors which go beyond the standards, with technical applicative and custom-made features thought to satisfy its customers' needs. High performance motors in terms of power and safety which are entirely produced in its own factories. Every single product is the result of a fully tested and highly monitored production process, which provides checks in the windings of every single motor.



## A Very Consolidated Leadership

Starting in the early 60's, SICMEMOTORI started to design and manufacture D.C. and Vector electric motors for industrial applications with power ratings from 0.5kW up to 2,700kW; particularly where speed variation is requested.

SICMEMOTORI mission is to place in the market a very reliable and technological advanced product. According to corporate philosophy that customers come always first, company team is constantly working side by side with the client in order to find out together the best technical solutions, both to optimize costs and time in the various aspects that different applications could present. And today ranks as one of the most important European players in the field of modern industrial drive motorization.





## So similar and yet so different

Since 1955, VARVEL has been making speed reducers and variators for industry applications. Reliable partner in power transmission equipment offers also customized solutions always according to a socially responsible company values. lead Varvel products by a unique kit form, common to all gearbox series. This feature allows distributors an easier job to set up required products in few minutes.

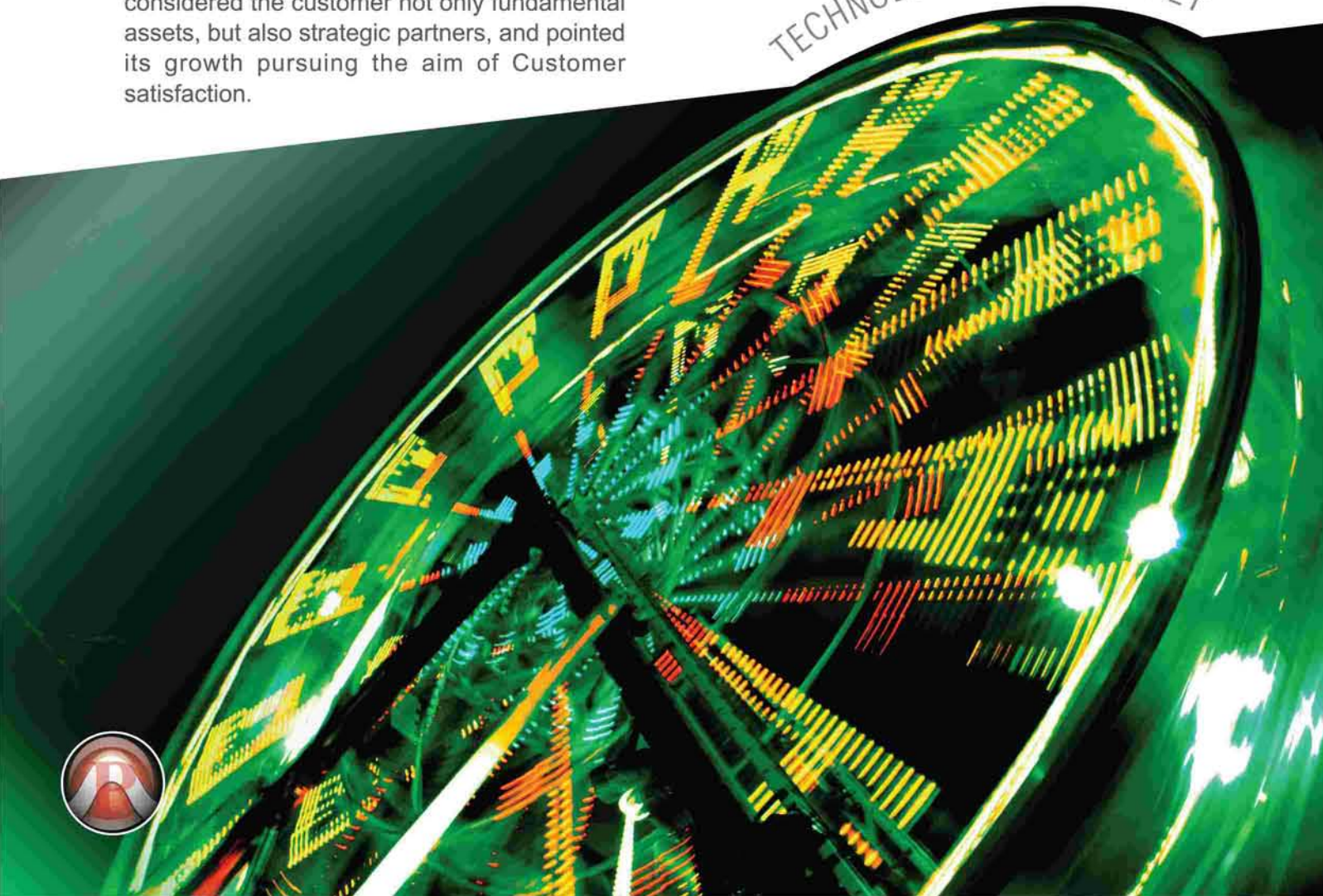
VARVEL Mission is to be a Trustworthy commercial partner in power transmission manufacturing worldwide and marketing through a High service level, Product modularity and Solution customizing in obedience of the values of a socially responsible enterprise, always considered the customer not only fundamental assets, but also strategic partners, and pointed its growth pursuing the aim of Customer satisfaction.



TECHNOLOGY MADE IN ITALY

## Motion tamers

CORBETTA, an Italian company, has been manufacturing Brakes, Clutches and Torque limiters for more than 30 years. It's still very dynamically capable of satisfying our customers' specific requirements; quickly evolving working trends that lead us to adopt up to date manufacturing technology and company organization, to express an inventive design, to invest efficiently and constantly, to train qualified personnel, to select our suppliers in order to obtain a product combining quality and price competitiveness.



REBORN, the revolution...

Why throw your old analogue drive away?

SAEL srl has been doing business in the automation and industrial electronics market since 1987. During these years that witnessed the continuous growth of technology and production, its most significant experience was gained in the steel, wire, paper and printing, plastics and rubber and machine tools sectors. However, it also produced applications in various smaller sectors.

SAEL also manufactures power and control electronics, producing and incorporating in its systems fully digital AC/DC inverters and converters, control cards and terminals with advanced technology in step with the latest manufacturing standards.

SAEL has developed a new revolutionary system for inexpensively rebuilding old drives boards that is unrivalled in its flexibility. After simple transformation with this system, the electrical board is "revived" becoming just like its latest generation hi-tech counter par. The aging of the inherited electrical boards that SAEL services at customer plants has pushed us to search for a solution for our customers that could remodernize old drives making them just as reliable as modern systems. To guarantee maximum reliability when revamping old DC boards, we designed a control rack that replaces the old control card of any drive in the market.

AL MAWARED ENGINEERING & TRADING S.A.E

12, Nakhla El Motee St., Heliopolis - Cairo - Egypt  
Tel.: +202 22401678 Fax: +202 26443739  
www.met-eg.com almwared@link.net

