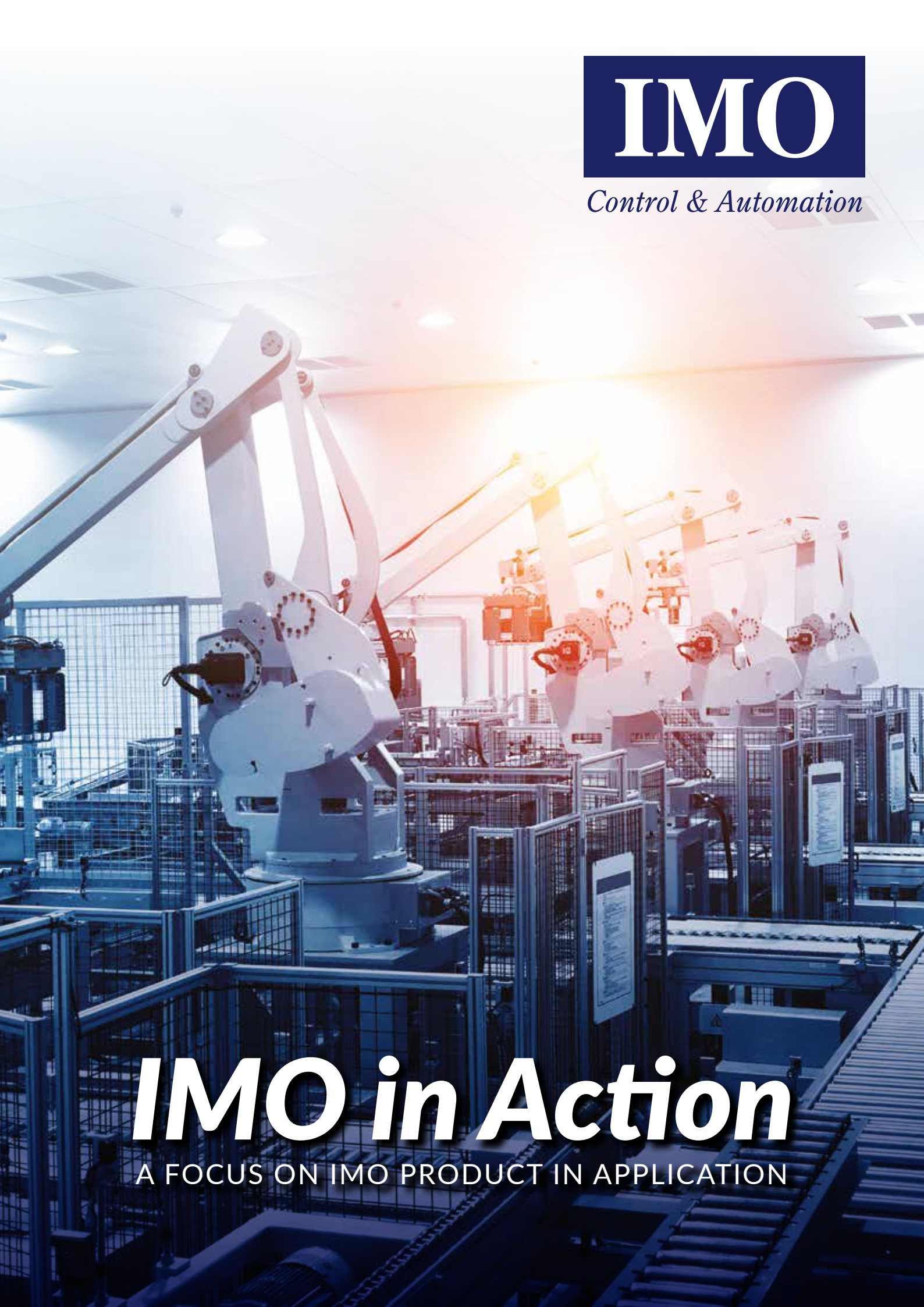
IMO

Control & Automation



IMO in Action

A FOCUS ON IMO PRODUCT IN APPLICATION

We Succeed Through The Success Of Our Customers

IMO has been manufacturing and supplying control components for over 50 years, often leading the way in the introduction of innovative solutions to meet market needs. From the introduction of the first ever British Telecom Approved relay to the launch of the first compact AC variable speed drive, we have consistently broken barriers.

Throughout our journey, our customers' competitive challenges have been of paramount importance to our own success, so we work tirelessly to help our customers differentiate their product, improve their service offering and grow their market share. Our approach has allowed us to enjoy long-term relationships with some of the largest blue-chip companies in the world and to help tomorrow's success stories on their journey to prominence.

With customer relationships that go back over 30 years we are proud to have earned and maintained the trust of so many of our customers for so long. Regardless of the evolution of technology and market forces, the basic principles at the heart of our business relationships always remain constant.

At the core, our ethos is very simple. When you become an IMO customer, you become part of our extended family and we care. A lot!

Whether you are dealing with an IMO sales representative at your site or speaking by telephone to our technical support team or checking pricing with our customer services team, our service to all our customers is personal. Our people are trained to quickly learn your requirements and to concentrate on the one thing that brings you back to IMO each time; ensuring that you love working with us.

With customer application labs, technical training suites, guaranteed same day dispatch, buffer stock facilities, even consignment stock locations, everything is thought through and delivered with a care and attention that simply isn't available anywhere else.

From panel components such as relays, timers and terminal blocks to PLC, HMI and AC Drive based automation systems that operate sophisticated machine processes, customers around the world rely on our product solutions to perform as integral parts of their business. This is no small responsibility and one which we take very seriously.

> *"When our customers grow, we grow, so we cannot think or act independently. Our customers determine our future and we recognise that we can have an important part to play in theirs."*
>
> **Fausto Furlotti**
> *Chief Executive*

IMO Customers Include...

ABB, Airbus, Applied Materials, Caterpillar, Ford, Cancer Research UK, Eaton, Heinz, Land Rover, Jaguar, KONE, Detroit Hoist Since 1905, gm, Honeywell, Seeley International, Nestlé, Nissan, Marriott, P&G, Siemens, Tesco, Rivian, Walmart, Cooper, Unilever, Royal Mail

www.imopc.com

Brewery Fermentation Tank Control Solution

We were approached by a reputable micro-brewery who were looking for a control solution to be implemented on their fermentation tanks allowing for remote monitoring in order to maintain production even when no-one was present at the site. The optimum hardware for the customer's requirement was the i3CMini which is able to control the fermenting temperatures within the tanks, whilst providing remote access. The customer can now monitor all temperatures during the fermentation process, and keep track of the entire brewing process from the comfort of their own home. This means that they are not only able to see exactly what is happening with the process, they also receive alarms when the system needs attention, plus are able to make changes to various settings in order to maintain production.

"The IMO solution has given me the ability to keep track of my brewing process remotely. This enables me to maintain optimum production even when not on site. I was able to undertake the programming myself using the really intuitive software."

Company Owner, Three Blind Mice Brewery

Three Blind Mice Brewery

Fresh Food Processing Conveyor Application

IMO was approached by a French commercial nursery producing salad vegetables and aromatic plants seeking to install a conveyor system to monitor and control their food produce. An integrated solution using IMO QD sensors on a Modbus RS485 network in combination with an iView HMI, iSmart intelligent relay and a number of SD1 variable speed drives delivered the perfect solution. On completion the customer was able to control conveyor speed, monitor food output and collate the information on automated data logging files which could be periodically exported to a USB flash drive.

"Although we had some level of technical knowledge, we were very reliant upon IMO for assistance with the programming and commissioning. We were really impressed with the high level of technical knowledge that IMO provided to us. The end solution meets our requirement perfectly, and has given us the template for future expansion of our business, and also future technology enhancements."

Lead Project Engineer, End Customer

Alaco Dam (Calabria, Italy) Control Solution

IMO Automazione in Italy were approached by ICOEM S.r.l. to assist in providing a solution for the Alaco Dam located in Calabria, southern Italy. The dam, which was completed in 2004, was still using the original parts and components fitted at the time of it's construction, but was starting to experience control issues with the water valves at the bottom of the dam wall. Working with ICOEM S.r.l., we recommended the i3AX intelligent controller to work in conjunction with the iView Advanced HMI. The i3AX was installed directly with close proximity to the lower valves, with the iView located in a control panel in a separate control room, connected over Ethernet.

"We have found IMO Automazione to be knowledgeable and helpful, and we worked very closely with them in order to provide the best possible solution for the end user. This particular project was not only completed ahead of schedule, but was done so in the most efficient and cost effective way. This has given us the competitive edge needed to succeed."

Lead Project Engineer, ICOEM S.r.l.

ICOEM S.R.L

Rail Power Switching Application

IMO Automation in Georgia, USA were approached by a customer who was developing a solar-hybrid power system for use in rail track switching stations, that combines solar generated power with battery storage, and allows technicians to select which source they draw power from: Solar Power; Battery Power; Traditional AC Mains Power Supply. At the heart of the system is the IMO range of multi-purpose industrial contactors, providing reliable switching of the multiple power sources. The coil consumption of these contactors contributes to the power savings with a draw of only 3W when closed. The MCR contactors are then switched by IMO's industrial-duty panel mounted 3-position cam switch. The solid tactile response of the cam switch, along with three IMO high-visibility LED pilot lights which provide feedback to the operator to indicate what power source is being utilised.

"IMO's consultative approach allowed us to test their components and ensures a robust and reliable solution for energy savings in the rail transportation vertical."

Lead Engineer, OEM Manufacturer

Yoghurt Dispensing Machinery Solution

IMO Jeambrun SAS were approached by a systems integrator with a customer wanting to manufacture a specialised food packaging machine designed for dispensing yoghurt. The customer had a fixed budget, which meant that the integrator needed to source products at a highly competitive price, yet not compromising on quality or functionality. The yoghurt dispensing machine uses sensors, a foot switch, miniature circuit breakers, AC isolator, power supply and an HMI, and all IMO products were used to meet this demand. Additional to these products, the integrator is currently testing an IMO Variable Speed Drive for AC Motors for it's suitability for use in the machine, along with a brushless drive also to be supplied by IMO Jeambrun.

"We are very happy with the outcome of this project. The system integrator was able to provide a solution for us at a price that suited our budget. Functionality is perfect, and we are looking forward to converting the remaining products from other manufacturers to IMO products, as soon as testing has been completed."

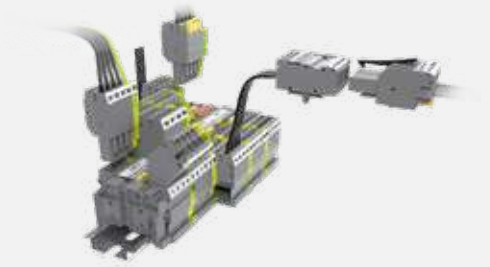
Lead Project Engineer, OEM Manufacturer

Livestock Barn Ventilation Solution

IMO was approached by a French manufacturer of agricultural automation equipment to help design a unique ventilation system for a livestock barn with the ability to control the air flow such that the cows were never directly in the ventilation flow at any point. Using a variety of IMO panel components, a mechanical system was designed that raised independently operated heavy duty curtains to precisely control the flow of natural air within the barn avoiding positions where livestock are congregated.

"We selected IMO panel products in order to build a cost effective control panel for this livestock ventilation solution. The enclosure we selected offers easy access to all of the components, and we also chose a selection of different coloured terminals to make the wiring easier for our engineers, which also serves to make maintenance easier in the future, should that need arise. Our customer was very happy with the result, and the nature of the way the panel was created means it can always be expanded on in the future if the customer requires limit switches and remote control functionality."

Lead Engineer, OEM Manufacturer



Royal Navy Onboard Refrigeration Solution

The Royal Navy had a requirement to refit the refrigeration units in their Duke Class Type 23 Frigates and IMO's iView Advanced HMI was selected as the most suitable primary operator interface for the task. The HMI was required to integrate with the local PLC control via a Modbus datalink. Once integrated into the existing onboard systems all required functionality was programmed in and made readily accessible via the iView menu screen.

"The use of the iView has enabled us to display flashing red warnings on the screen, which is also supported by automatic sending of a text message detailing the fault. Unskilled ships staff can then accurately report the fault description and trained technicians can then interrogate the iView data pages for information regarding the fault condition. This is a considerable technical advancement from the previous set-up which was virtually a "Christmas tree" of lights with no supporting data."

Technical Manager, Ernest West & Beynon

LCD Monitor Recycling Solution

An Italian customer called Technologies For Automation S.r.l. approached us for assistance in providing components for an LCD monitor recycling solution. The solution in question was based around a modular conveyor system with dedicated robotic arms, which was designed to move end-of-life LCD monitors from a picking zone to a disassembly area. After considerable consultation, it was decided that 10x SD1 AC Inverter Drives would be employed for managing the entire movement of the solution, which were in turn connected to a PLC via Modbus RTU. The panel also required the use of Motor Circuit Breakers, DIN Rail Terminals, Miniature Circuit Breakers and Power Supplies, which we were able to supply.

"We are very happy to use IMO's products for our monitor recycling solution, with particular appreciation of the SCP terminals which has allowed us to connect all of the machine board cables with connectors, reducing the assembly time for an on-site installation."

Ing. Francesco Alberti, Technologies for Automation S.r.l.

Car Wash Detergent Tank Level Application

A leading North American Chemical and Cleaning Products manufacturer for the car wash industry had a requirement to control the dosing of tank-stored detergent, soap and wax products through their car wash application. Further to consultation and testing, we supplied the IMO UK1C Ultrasonic Level Sensors with a 4-20mA output which were then mounted on the top of the each IBC tank. The sensors detect the liquid level which is then converted to a volume through the integrated PLC. The 4-20mA signal from the sensor was programmed to the level of the tanks and are specific to the product within them, as some tanks have differing capacities and are scaled differently. The UK1C sensors have a smaller footprint and lower cost than other level sensors typically used on these types of tanks. Additionally, the M12 connector enables quick changes when replacing sensors.

"Implementation of IMO's sensors has allowed us to see real time usage of our product which also helps in providing accurate invoicing, as well as helping to improve our predictive production of products for stock."

Senior Project Engineer, OEM Manufacturer

Vineyard Irrigation Application

IMO Pacific were working with a customer that required an improved irrigation system with improved control and diagnostics for their working vineyard. After consultation with the customer, it was found that the quickest and cheapest option was to replace their existing controller with an IMO i3CX all-in-one controller. The i3CX was mounted directly onto the control panel door within the irrigation control house to directly control and monitor two irrigation zones as well as the fertilization system, all of which were using variable speed drives to dispense the dosing amounts. The i3CX controlled all of the variable speed drives using the inbuilt Ethernet port over Modbus TCP. The i3CX ensures the set point system pressure is always maintained and all VSD information, such as current, frequency, voltage and health can be readily viewed and logged.

"The commissioning of the vineyard irrigations solution was easily achieved with the i3CX from IMO and day to day operation is now much easier, and provides greater visibility of diagnostics."

Technical Director, Integrator

Robotic Conveyor Belt System Application

Virginio Nastri has been developing and constructing handling systems for the manufacturing industry since 1964. Amongst the many different types of handling systems they produce are robotic conveyor belt systems, which they recently featured at the PLAST exhibition in Milan. The featured conveyor system is managed by an IMO XGBU Programmable Logic Controller via an IMO iView Advanced HMI, which in turn, control four SD1 Variable Speed Inverter Drives that manage the main motors within the system. Over the years, and through the supply of other highly reliable components, IMO has become a tier 1 supplier for Virginio Nastri.

"For many years we have been using IMO products and components, and with good results. We find their products to be very reliable, and we have a very good working relationship with them."

Lead Project Engineer, Virginio Nastri

Vacuum Toilet System Application

With 85% of the population living in cities, Finland's rural areas can frequently be off-gird in terms of waste-water provision leading to the need for hygienic, stand-alone toilet facilities. IMO's Finnish distributor (TamControl) was approached by Fann Ympäristötekniikka Oywho were designing their next generation vacuum toilet system using only 0.5l water flush and suction to transfer waste-water into an enclosed tank. The toilet is controlled and monitored via an IMO iView HMI connected to an IMO iSmart module complimented by an array of IMO control components.

"We have been a distributor for IMO products for many years, and have always found their products to be of the highest quality and reliability. We were excited to be involved in the Roslagen project, and use our expertise in industrial controls to recommend a control solution for Fann. The Roslagen was conceived and made in Finland, so we are very proud to support a local Finnish manufacturer."

Marko Koivuluoma, TamControl

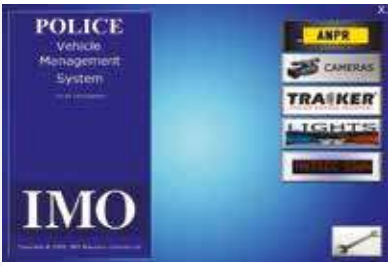
Valmistettu Suomessa

Specialist Vehicle Interface Application

The i3 Intelligent Controller from IMO is already being used in a wide range of specialist vehicles including custodial, fire and cash-in-transit vehicles, as well as in state-of-the-art UK police vehicles. Notoriously, police vehicles carry a range of high tech equipment and software systems which are often produced by several suppliers, and result in having different user interfaces which the vehicle crew need to operate.

A single user interface running on a touch screen PC would bring all of these systems together in one place, and that is exactly what IMO has produced. Operating a number of electrical components installed on the vehicle, including the light bar, the siren and the matrix sign at the rear of the vehicle. It also provides a graphical front end for the stolen vehicle 'Tracker' system. The software will also interface with a third party in-car ANPR system (automatic number plate recognition) and the CCTV camera system for the vehicle-mounted cameras. Physical control is provided via IMO's powerful i3 controller.

The user interface uses IMO's Panel-Point SCADAlite software platform.



Victorian Water Pumping Station Solution

Based on the outskirts of Nottingham, Papplewick Pumping Station was built between 1882-1884 to supplement the water supply for the growing Midlands city. Today, the engine house is home to the original twin beam engines, through to be the last built by the famous firm of James Watt & Co. Over the years, the water works has seen an extensive restoration programme. As part of the programme, the Papplewick Pumping Station Preservation Group contacted IMO to seek advice on the maintenance of a Jaguar VX Drive which had been in operation for over 12 years. IMO took the decision to replace the Drive with a brand new Jaguar VXT inverter, to provide improved ability to control the 40HP exhaust fan which services six Galloway Boilers, and make the process much more efficient.

"We were really impressed with the response from IMO, who have not only replaced the drive but also improved the efficiency of the whole system. The installation has all been completed in time for our new visitor season, when we conduct the majority of our steaming days."

Barry Simons, Papplewick Pumping Station Preservation Group

Papplewick Pumping Station

Diamond Wire Quarry Machinery Application

IMO Automazione were approached by the customer who was looking for a dual solution for their Fast 2000 Diamond Wire Cutting Machines. After careful evaluation, two SD1 drives were selected, based upon their ability to communicate with each other, their accuracy and incredible reliability, tested to the extreme as their working environment would be exceptionally challenging, and at high altitude in the Apuane Alps. The SD1-4.2A-21 (0.75kW) variable speed drive was selected to control the linear feed of the carriage. The SD1-115A-43 (55kW) variable speed drive was selected to control the cutting head speed. Using PID control, the speeds are matched to ensure the greatest efficiency of the cutting process, without breaking the cutting cable.

"We have chosen the IMO products because they symbolise the Italian mentality and the mentality of the people from "Massa Carrara". The products are easy to program, strong and offer optimum value for money. There are many companies that manufacture drives, but it is not easy finding a friend that helps you find a total solution."

Lead Project Engineer, Bicoma S.r.l.

Bicoma
Macchine per marmi e graniti

Agricultural Moisture Control Application

IMO Automation LLC was approached by an OEM manufacturer of agricultural moisture controllers and monitoring systems who were looking for a robust and feature rich PLC and HMI combination for their range of bolt-on controllers used primarily within the agricultural industry. Product selection was based upon a number of factors, with size, cost and functionality being high on their list of requirements, along with ease of programming, and the i3 met all of their needs. Having tested and explored the limits of the i3's integral HTML server, the customer has been able to provide their clients with a detailed remote control and monitoring option by use of custom Javascript, that works from anywhere with internet access. This system not only provides real time drying information, it also allows for changes to be made to modes and setpoints from a smartphone, tablet or computer.

"We continue to be significantly impressed by the i3. It is a very robust controller which has lots of features built in that allow us to offer more to our customers."

Project Manager, OEM Manufacturer

Component Consolidation in Oven Application

A US OEM manufacturer of commercial ovens and dishwashers made contact with IMO Automation whilst looking to respecify some of their internal components that featured in both product ranges. Having consulted with the customer, it was found that they manufacture and sell their products globally, and as such, their products utilise differing electrical grid voltages between 210-230V and 50-60Hz. Within the respecifying project, there was also a call to consolidate their component inventory where requirements and selection were available, in order to reduce their inventory and manufacturing costs. We identified an opportunity to provide IMO MC Contactors that utilises the new universal 190R coil, which is designed to use wider voltage range from 200-240V and 50-60Hz. This enabled a one-size-fits-all solution that will operate under both European voltage norms and North American voltage norms.

"When we found out that there was a coil available that could meet our global needs in one SKU, it was a no brainer for us to begin testing."

Lead Engineer, OEM Manufacturer

Flooded Tin Mine Pumping Solution

IMO was approached by an engineering company working with a leading mineral exploration and development company that was looking to de-water a flooded mine in order to reopen it. The biggest hurdle of the project is the 2 million mega-litres of water inside the mine. The mineral exploration and development company required an investment of £15 million to de-water the mine, build a water treatment plant, and pay for the electricity and chemicals required to pump the water out and treat it. It is estimated that it will take around 18 months to remove and treat all of the flood water. We, along with several other drives manufacturers were approached to provide them with the necessary Variable Speed Drives required for the pumping application. After some consultation, it was determined that the HD2 range of Variable Speed Drives (VSDs) would be the most appropriate for the requirement, and the project was won by IMO due to the very strict deadlines the customer had, and our ability to deliver the components they needed within the tight timeframe. Additional to supplying the VSDs, we also provided high level technical support during the installation process to ensure our drives were optimised for the application. A successful deployment of HD2 drives has led to the commencement of the de-watering phase.

Chemical Tanker Dosing Application

IMO worked closely with an Siemens Systems Integrator involved in replacing drives failures in a chemical tanker dosing application for one of their end users. Due to the nature of the application, the components used are subject to high vibration frequencies, and previous components used simply weren't up to the task, resulting in numerous failures. The high performance HD2 variable speed drives were suggested as a possible solution, and underwent intensive vibration testing, passing with flying colours. Upon successful completion of the testing, the customer rolled out an initial trial in a live field-based unit, which was also successful, and rolled out to their entire fleet of 30 vehicles. The IMO HD2 drive was used in conjunction with the HD2-E-PRF communications card to connect to an existing Siemens programmable logic controller.

"We struggled to find the right components for this project, but rigorous testing of the IMO HD2 proved it was capable of surviving the harsh environment it would be tasked with working in. Several months on from the first vehicle and we've had no failures or issues."

Project Leader, Unicat Technologies

UNICAT TECHNOLOGIES

TRUE DC Isolators in Commercial PV Arrays

ZLC Energy (a Cornish company based in Liskeard specialising in providing zero and low carbon energy) needed to source a range of TRUE DC solar isolators to compliment their photovoltaic offering for customers embarking upon either new-build, retro-fit or updating their existing technologies. Reliability was of paramount importance to ZLC Energy in order to maintain their own quality brand, and the SI range of TRUE DC Solar Isolators by IMO ticked all of their boxes, especially in regard to reliability. Since 2009, and the launch of the first ever TRUE DC isolator with UL508 approval, the SI Series has now garnered over 8 million installed units worldwide. The high quality manufacturing processes of the SI range are now ensuring the ZLC Energy is offering the very best to their customers.

"We use IMO products for consistent performance, reliability and availability. High Performance products supplied at Competitive Prices. We have used other isolators in the past and have had to go out and replace these due to catastrophic failures."

Chris Cowap, ZLC Energy

zlc energy
ZERO LOW CARBON

Agricultural Grain Dryer Application

Devizes Control Systems, a leading specialist in the design and manufacture of agricultural control systems with a long standing relationship with IMO, decided to use IMO HD2 Variable Speed Drives in the control panels for their industrial grain dryers. The HD2 VSDs are used to control the conveyor application which delivers moist grain to the dryers. The dryer dries out the grain to the correct moisture level, with the HD2 VSDs taking signals from the moisture sensors to automatically adjust the speed of the conveyor. The speed control delivered by the HD2 VSDs plays a vital part in ensuring the drying process returns maximum profitability for the farmer.

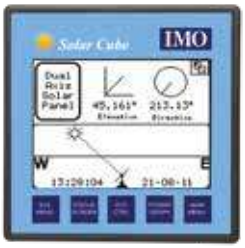
"The service we received from IMO was brilliant. The Sales Engineer was always on hand to answer calls and visited us frequently to make sure we had all the parts we needed. Technically the IMO products do everything we need them to do, and more, which is why we have partnered with them for the bulk of our control panel components supply."

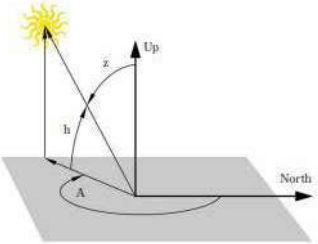
Andrew Bolwell, Devizes Control Systems

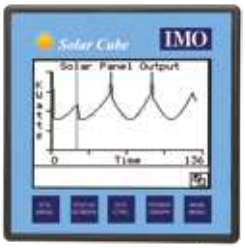
2-Axis Solar Array Tracking Solution

IMO Canada was approached by a solar farm customer to offer a reliable solution for solar tracking control, replacing existing programmable relays and time-based PLC tracking controls. The customer indicated a large number of high quality; 2 axis solar arrays built on rural and farm properties that were starting to fail, and no support was available for the existing systems. We recommended the IMO Solar Cube. Out-of-the-box, the client retrofitted the inputs and outputs from the existing tracker into the Solar Cube's universal input and output terminals built into the controller. With the addition of IMO's 3D compass mounted on the back of the solar array, setup was fast and easy with the Solar Cube's built in digital touch screen display. The client entered the time, date and GPS coordinates of the solar array site, and started tracking the sun accurately, increasing their yield and revenue.

The Solar Cube uses a proven formula to calculate 'zenith angle' and 'azimuth angle' of the sun while using array position feedback from IMO's 3D compass. In this way, tracking is more accurate and reliable, ensuring maximized yields.







Commercial Refrigeration Energy Management

For many years, IMO Precision Controls Ltd has been working with a long-term, UK based OEM manufacturer of a market leading range of Electronic Temperature Controllers and Energy Management Devices (EMDs) that are used to operate commercial refrigeration units and beverage coolers. The customer's design engineers have diligently specified IMO Relays due to their long life switching capabilities and high production quality: ETNA Power Relays which offer a slim design only 5mm wide; STN Power Relays with 10A switching capability; SRP Power Relays with an even greater switching capability up to 16A; and SRDGA Subminiature Internediate Power Relays. The customer is also taking advantage of a superior logistic solution provided by our Asia-based warehouse which meets their growing demands with shorter lead times.

"We are really happy with the product quality, technical support and customer service. IMO always go the extra mile in supporting our changing demands, and keeping a buffer for us is very useful indeed."

Lead Project Engineer, OEM Manufacturer

Refrigeration Motor Control Application

IMO Jeambrun SAS were approached by a customer that manufactured refrigeration motor system control panels, who were experiencing issues surrounding the amount of time taken to prepare link wires which needed cutting to size, stripping and mounting ferrules in order to cross connect to a contactor mounted on a different rail. We discussed their sore points and suggested the use of the innovative C432VK1 Link Module, specifically designed to enable easy connection between the C4/32 Motor Circuit Breaker and the MB range of IMO Contactor. The C4 Motor Circuit Breaker and MB Contactor would then replace the existing hardware, with the link module bridging the gap between them. Although the introduction of the link module meant that the engineers were required to use a screwdriver to tighten the contacts, there were significant time savings compared to their former solution.

"We are really happy with the solution given to us by IMO. Our operators can now save a lot of time constructing the control panel, resulting in greater efficiency."

Lead Engineer, OEM Manufacturer

Air Handler (HVAC) Application

IMO Automation was approached by an engineering team from a large multinational retail corporation about their air handling application. The customer was experiencing drive failures with their existing variable speed drives, and also experienced difficulties in replacing and reprogramming new units. The cumulative drive failures lead to a reduction in energy efficiencies and cost savings for long periods of time. After a rigorous testing period in the rooftop heat of South Central USA, the customer awarded IMO Automation with the contract to supply replacement drives for the entire installation, citing the ease of installation and commissioning, as well as the noted robustness and reliability of the IMO HD2 VSDs.

"We went out to the market looking for a long time partner that would prioritize our needs, coupled with a user friendly and robust product. We definitely found that in IMO Automation, who even went as far as developing firmware specifically for our needs and a commissioning tutorial to take the ease-of-use by our team to another level."

Project Engineer, End Customer

Energy Saving Home Automation Solution

IMO Automazione in Italy worked very closely with a local OEM Manufacturer called Systech to provide the most appropriate components for their new interactive MyHome Control system. Their innovative solution allows for full control of devices within the home, whilst delivering significant energy savings and allowing for future development of the system as and when the regulations for monitoring energy consumption change. The MyHome Control system enables remote access from smartphone, PC or tablet for immediate access, as well as scheduling of pre-determined scenarios, such as simulating the residents presence whilst away on holiday. The system uses a multitude of algorithms to optimise daily programming, with an emphasis on energy saving, which means it will turn off items such as lights and heating in the even that the system detects that nobody is home. Other advantages of the MyHome Control system is the automated safe closure of gas valves whilst the property is unoccupied, and opening of the valves when someone enters the property, as well as other safety and security features.

SYSTECH
SOLUZIONI ELETTRICHE EVOLUTE

The system utilises the IMO XGBU PLC as the main controller, with relative I/O expansion which controls all of the sensors and actuators. An IMO iView Advanced HMI is used to access all of the features and functions.

Marine Engine Room Ventilation Solution

IMO Automazione in Italy were contacted by an Italian engineering consultancy called Finservice Group S.r.l. about a marine ventilation project they were involved with. Engine room ventilation systems onboard motorised yachts must be regulated according to the thermal loads and the rotation speed of diesel internal combustion engines (ICE) for safety reasons. Each supply and exhaust fan needs to be individually managed by an inverter drive for greater control and efficiency and to make sure the engine room is always correctly ventilated. HD2 variable speed drives were selected for the project, allowing for remote control of the ventilation system via PLC software from the Engine Control Room. Each installation also allows for the manual adjustment of the speed of each individual fan by means of a potentiometer located on the front panel of the switchboard.

"We selected the IMO HD2 inverter drives for our ventilation room project. The drives gave the system the necessary control of the ventilation fans. IMO's approach impressed us, and they worked tirelessly to ensure the products supplied met all of our objectives."

Project Manager, Finservices Group S.r.l.

Gruppo FINSERVICE.com
LEADER DELLA FINANZA AGEVOLATA

Relay Replacement In Elevator Application

IMO secured a contract to supply Wessex Lifts with replacement Industrial Relays, thanks to the nature of the plug and socket aspect of the IMO HYE Relay Series which provided significant time savings when either fixing or replacing failed relays in their domestic elevators. Wessex Lifts had previously specified another manufacturer's relays, which were soldered onto the PCB. When engineers were called to fix these under warranty, they found it was easier to replace the entire PCB than unsolder and solder a new relay to it. This process took over an hour of work and resulted in the PCB being written off. With the HYE Relays, the status is indicated on each relay for easy identification by an LED, and to replace any faulty relays, the engineer simply pulls it out of the socket, and pushes a new one in. This has enabled Wessex Lifts to become more efficient, whilst improving their service levels to their own customers.

Wessex Lifts

"The plug-in relay solution provided by IMO is benefiting us in so many ways. Time spent on maintenance has been reduced, so we can service more customers, more quickly."

Julian Benn, Wessex Lifts

Training Centre Lighting Application

The customer - Liberty Specialty Steels - were looking for a lighting solution for their apprentice training centre. Their 25 year old system needed replacing to a more modern and energy efficient solution. The customer engaged with IMO after determining that the solution required a sequential start-up and shut-down of the high bay lighting luminaires. We suggested using an iSmart intelligent relay to control the start-up and shut-down, with an added benefit of a peripheral integrated lux level sensor which detected the necessary ambient light level to engage or disengage the system. IMO introduced Liberty Steel to TH Electrical system integrators who built the approved panel, featuring an array of IMO products including an AC isolator, miniature circuit breakers, modular contactors, modular power supply, pilot lights, pushbuttons and screw clamp DIN rail terminals.

"IMO came up with an extremely efficient solution for controlling the lighting, and with this technology, we aim to save money through proper utilisation of the lighting within the training centre, in addition to giving the area a modern upgraded way to control their lighting."

Energy Saving Engineer, Liberty Specialty Steels

Lobster Livestock Containment Solution

IMO Pacific in Perth, Australia were approached by a customer requiring remote alarm messaging for critical faults within their large seawater tanks at a lobster containment facility. Each tank is temperature controlled and a continuous flow of seawater must be maintained for the filtration and oxygenation system to keep the lobsters in a healthy condition. The deployment of the IMO i3A Intelligent Controller integrated into the existing control system allowed for status updates, as well as temperature and flow monitoring, and the setting up of SMS notification alarms for no flow or over/under temperature scenarios.

"The i3 monitoring system has helped Lobster Alive maintain constant temperatures throughout the year by advising me when a problem has arisen, by alerting me with an SMS to my mobile phone, as well as two other staff members Being able to respond quickly means that live lobsters can be saved and no mortality occurs."

Company Owner, Lobster Alive (Perth, Western Australia)

Biogas Engine Control Application

IMO Jeambrun SAS were approached by a French Panel Builder looking to produce a control system for a 1MW Biogas Engine. The solution consists of two main control panels, with the first controlling and regulating the auxiliary components necessary for the engine's overall operation and cooling. The second panel contains the programmable logic controller and HMI which relays essential signals via a fibre optic network, which allows the biogas engine to deliver power to the network once it has reached a matching frequency. IMO supplied an XGB programmable logic controller base unit as well as an iView advanced HMI, i3 intelligent controller, industrial relays, miniature circuit breakers and terminal blocks, which were all used in producing the final control solution.

"We have used IMO products on other projects, so we are familiar with many ranges, and we enjoy the high level of technical support that IMO offers as well as the license free programming software that their products use."

Senior Product Engineer, Telec Industrie

Remote Control Radio Tower Application

Bell Canada, one of Canada's largest radio and telecommunications providers, approached IMO to provide technical assistance to convert their older relay-based analogue antenna array control systems to a more modern PLC-based system, providing a faster and more reliable control system as well as remote control and monitoring capabilities. After consultation, the existing network was replaced with an Ethernet network with fibre optics connecting the various radio towers. IMO supplied XEL-BSSA expansion modules for each of the antenna's local control panels as well as a 15" i3DX intelligent controller which provided PLC control needed to monitor and control the antennas. Having two separate Ethernet ports, the i3DX allowed for a second network to be set up that allowed for maintenance and for remote programmers to reprogramme the arrays sequence control.

"With the changes that have been recently implemented, we now have an upgraded, modern and faster system that met all our requirements for the discrete control of antenna sequencing."

Project Supervisor, Bell Canada

Biomass Boiler Control Solution

An OEM of Biomass Boilers had a requirement for a control system capable of operating as a 'standalone' or as part of a networked system, where remote monitoring/support could be offered. After a considerable consultation process, the i3C Mini was determined to meet all of the customers requirements. Within the biomass boiler, the type-K temperature sensors are connected to an IMO 4 channel thermocouple module (IOS/M04ITX-D1) with fans and pumps connected to the VSD's. All IO are controlled by the i3: depending upon the values of all temperature sensors, as well as fan and pump speeds, adjustments are made to provide optimum performance of the Boiler.

"Prior to IMO, we had tried several PLC and HMI combinations, but none proved able to withstand the operating conditions that we regularly encounter. The IMO i3 is head and shoulders above any other PLC/HMI device on the market. We now offer 'off the shelf' solutions to suit a variety of requirements, which require minimal additional engineering input."

Senior Engineer, OEM Manufacturer

Education: PLC Programming Training Course

A long term partner of IMO called Intecno Industrial Automation, located in Mierlo, Netherlands, are really passionate about the industry, and were driven to help the engineers of tomorrow by creating learning resources for student engineers at the ROVC Technical College. One such resource is the **PLC - Basic Structured Text** 4-day training course. Delivered by Intecno, the course will enable students to read, understand, modify and write structured text programs for Programmable Logic Controllers. As well as theory, the course is packed with practical assignments that feature the IMO i3 Intelligent Controller, and a simulation box featuring IMO iSmart Programmable Relays.

"Intecno has been supplying IMO products to our customers for many years, as well as providing technical support. We wanted to give back to the industry that provides us with a living by sharing our knowledge and expertise through providing technical training to up-and-coming engineers. Our close relationship with IMO has given us access to all of the industrial automation products needed to deliver this PLC training course successfully."

John Triki, Intecno Industrial Automation

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