

Tailor-made controls for hazardous, corrosive and subsea environments

With the oil and gas industry in general facing pressures of extracting from marginal fields on and off-shore, it is vital that every platform is designed to be as energy efficient and productive as possible.

In a recent interview Kevin Aston, a product expert at Rotork Midland, said: "Midland-ACS, which is the industry recognised brand of Rotork Midland, has been providing products and solutions to the oil and gas, petrochemical, power generation and industrial sector for over sixty years. We are a premier designer and manufacturer of pneumatic and hydraulic control valves, solenoid valves, linear control systems and engineered-to-order products, whilst also offering 316L, Super Duplex, 6Mo and Titanium solutions".

Midland-ACS has an extensive core product portfolio of both pneumatic and hydraulic controls. In its pneumatic range, it provides air preparation products such as filter regulators, pressure regulators and combined units and produces spool and poppet valves which can be operated by air, manually, mechanically or by solenoid.

Midland-ACS manufactures an impressive range of hydraulic control valves certified for Zone 0, I and Class I Division I, up to 1,140 bar max operating pressure and 200 litres/min. The range extends to low power consumption and low temperature range options. They are used on wellhead controls, BOP, skids, chemical injection valves, ballast controls, local control panels, workover control systems, ESD and partial stroking circuitry.

Additional products supplied to market on short lead times include high quality, non-return, quick exhaust flow controls and ranges of thermal fuses, pressure switches and boosters; not forgetting, of course, world-class direct acting low power solenoid valves. This comprehensive product range boasts SIL rated products and regional approvals including UL, CSA, CE, ATEX, IECEx, CUTR and INMETRO.

Kevin was proud to explain that Midland-ACS is world-renowned for its "ability to address problems and provide solutions for the control of hydraulic and pneumatic actuated process valves both on and

offshore". Kevin views this as setting Midland-ACS apart from competitors. He went on to add "The company's purpose is to provide technical support and solutions to the engineering community whilst offering well designed, reliable pneumatic and hydraulic equipment for harsh service environments."

A commitment to growth in flow control

There is a wide variety of Midland-ACS products available, designed for diverse applications. Within its dedicated flow control facility, Midland-ACS focuses in particular on how it can improve specific processes. An example is the company's approach to the use of regulators and

filter regulators, where the consequences of equipment failure in service include potential damage to pressure sensitive instruments, actuators and process valves. These difficulties can result in unscheduled production shutdowns and expensive repairs. To combat this problem, the company has extended its air pressure equipment range, including the development of the Over Pressurisation Device (OPD), designed specifically for severe offshore environments. Increases in outlet pressure can occur for many reasons and should this occur the device will automatically fail-safe within 30 milliseconds. The protection valve will be triggered to shut-off the outlet and vent the downstream pressure.



Fig 1 - Over Pressurisation Device (OPD).

Midland-ACS also offers a range of hydraulic solenoid valves and manifolds. A wealth of experience in actuator control systems has enabled the development of both generic and tailored solutions with the ability to operate reliably in the most arduous and severe environments. Engineered solutions can be specified for solenoid operated or low pressure air/hydraulic logic control.

Similarly, local control panels for hydraulic and pneumatic actuators are supplied to meet specific project requirements and manufactured in 316L stainless steel with IP66/67 ingress protection to cope with demanding, hazardous and corrosive environments. Tailor-made hydraulic and pneumatic valve control systems can be produced as manifold designs to eliminate costly pipework and fittings, resulting in weight and space savings which are crucial considerations in the oil and gas industry.

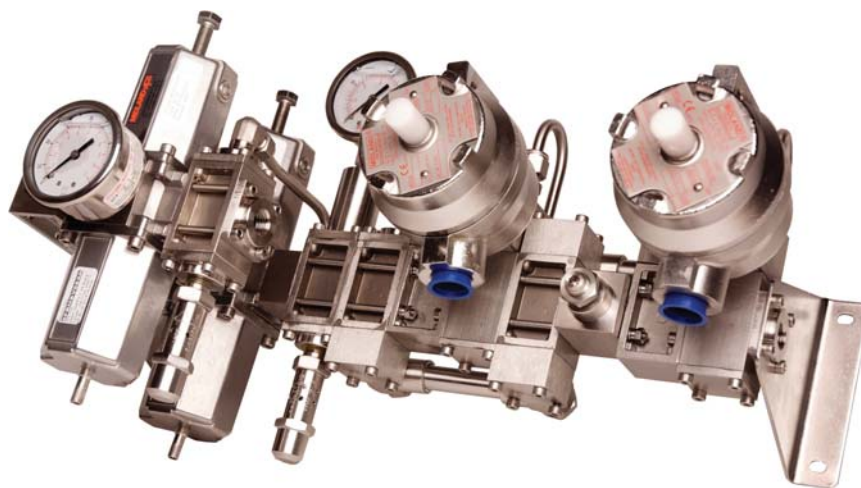


Fig 3 - IMPACT 2000™, Pneumatic Modular Manifold.

and filter regulators are connected in series using a universally compatible interface block and mounted directly onto the valve actuator. Each unit is supplied assembled and tested, ready to fit and

has been constructed with a moulded reinforced diaphragm and fine adjustment dual springs to ensure accurate regulation for high efficiency instrument air, sweet and natural gas processes. The regulator incorporates a 5cc removable condensate manual drain bowl containing a 25µm filter, delivering clean moisture-free gas filtration to expensive downstream critical equipment, while still maintaining a high flow capability.

The product is designed for temperatures ranging from -20°C to +80°C, with a 1 Bar differential flow rate of 550 litres per minute, and can withstand pressures of up to 20Bar as standard. Additionally, the design of the regulator means the inlet and outlet connections are on the same plane, simplifying installation and maintenance.

Summing up, Kevin Aston explains: "Midland-ACS is known internationally for technological expertise and a problem-solving approach to customer service, involving attention to detail and bespoke solutions for a wide range of applications, engineered from high quality products. Our highly skilled engineers are well equipped to provide a comprehensive range of engineering and manufacturing solutions for safety-critical, arduous and extreme environments."



Fig 4 - Compact filter regulator.

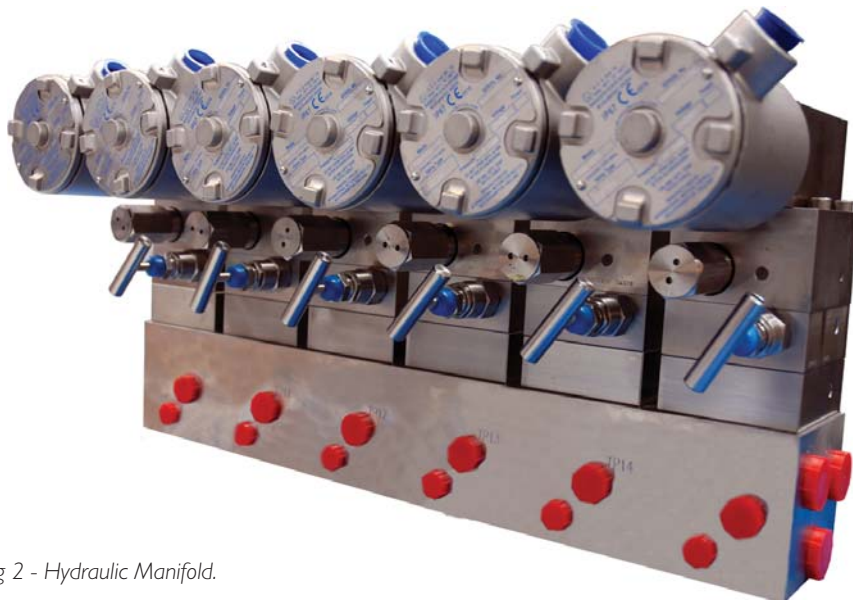


Fig 2 - Hydraulic Manifold.

The IMPACT 2000™ is a high integrity 316L stainless steel modular pneumatic actuator control assembly for the control and sequencing of process valve actuators on oil and gas platforms and pipelines. Lighter, stronger and more compact than panel mounting, the IMPACT 2000™ can be customised for standard shut-off circuits or intricate control systems and offers a significant reduction in total installed cost in both OPEX and CAPEX over panel mounted assemblies by eliminating traditional complex arrangements that use panels, pipes and additional fittings.

Using a range of field proven components, valves (spool, poppet or direct acting)

operate. No design work is required from the contractor and all components are kept in stock resulting in very short lead times. IMPACT 2000™ units will interface with pneumatic actuators from all global manufacturers and, with ATEX approval, are suitable for both hazardous areas and industrial use.

Other Midland-ACS product developments include a new Compact filter regulator to complement the existing range of air service preparation equipment. The stainless steel Compact can be used across many industries, including onshore and offshore oil and gas, refineries, power generation, pulp, paper and process plants. The innovative design