TYPE 80™ BLOWOUT PREVENTER

CONTROL SYSTEMS

CATALOGUE

AXON ENERGY PRODUCTS
Alternative Thinking™

AXON Energy Products is a global oilfield equipment manufacturer, engineering provider, and aftermarket service company driven by Alternative Thinking™. Backed by an unyielding commitment to our customers and decades-deep experience, we deliver products that perform, as well as an exceptional aftermarket experience.

With 33 locations in 7 countries, AXON serves its customers in the following areas:

- Pressure Products
- Well Intervention Products
- Drilling Products
- Rig Concept and Design
- Downhole Products
- Tubular Products
- RFID Products

Our 7 diverse product groups can deliver drilling and marine package solutions for a full spectrum of your oilfield needs.

Technology-focused Growth

We are committed to internal, technology-focused product expansion. In addition, we strive to continually evolve for our customers by Reviewing, Reacting, Rethinking, and Redesigning (R⁴).

For example, AXON retains a dedicated incubator of experienced engineers focused solely on research and development. Utilizing this concentrated approach, the product development process is streamlined and the typical time until market release is reduced significantly. In the last 2 years, AXON developed over 30 new products that are now commercially available.

Whether offshore or onshore, you can count on us to provide the products and services you desire with one distinct difference – an authentic dedication to supporting you from inception through aftermarket.
AXON’s Type 80™ BOP Control Systems provide the reliability and control required for demanding offshore and land applications.

The systems are available in standard or custom designs, with a choice of pumping systems. Utilizing touchscreen or push-button control panels and classified for hazardous area use, these systems feature ease of operation. In addition, AXON’s use of proprietary TR™ regulators adds to the overall reliability of these systems.

**BOP CONTROL SYSTEM TYPES**

<table>
<thead>
<tr>
<th>Subsea Pods</th>
<th>Surface Closing Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Pod</td>
<td>Electro-hydraulic</td>
</tr>
<tr>
<td>Mulpex Pod</td>
<td>Electro-pneumatic</td>
</tr>
<tr>
<td>Piloted Hose–down Riser Pod</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Piloted Hose–down Wireline Pod</td>
<td>Air Remote</td>
</tr>
<tr>
<td>Subsea HPUs</td>
<td>Manual</td>
</tr>
<tr>
<td>Mulpex HPU</td>
<td>Workover</td>
</tr>
<tr>
<td>Piloted HPU</td>
<td></td>
</tr>
</tbody>
</table>

**Control System Auxiliary Equipment**

- Reels: Cable, Hotline, Piloted Hose, Riser Fill Valve
- Diverter Control Panel
- Remote Panel: Air, Electric, Touch Screen
- Central Control Unit (CCU): Full and Mini Sizes
- Power Distribution Panel (PDP)
- Deadman Autoshear System (DMAS): Multiplex or Piloted
- Riser Fill Valve (RFV) System
- TR™ Regulators
- Crown block savers
- SPM Valves
- Accumulator Rack: Auxiliary, Diverter Modules, HPU, Subsea
- BOP System Testing Equipment
- Alarm Modules
- Ram Function Position Indication Status Modules
- Nitrogen Back–up Systems
Features / Benefits

- Both custom and standard designs are manufactured in accordance with API 16D
- Modular design of control system utilizing choice of material: stainless steel, carbon steel with electroless nickel plating, corrosion resistant alloys and custom material
- System designed to operate in the event of the solenoid and pressure switch enclosures water ingress
- Superior filtration utilizing Absolute Micron filters
- Low power requirements: 300 watts per control pod
- Choice of pump systems & accumulators (standard service, water service, 11 gal. to 90 gal.)
- Pulse testing of systems during operations
- Lockable cylinder
- Proprietary SPM valves, TR™ regulators and packer seals
- Dual load sharing power supplies
- Batch type mixing systems
- PBOF cabling system along with all connections with test ports
- Touchscreen controls, push-button control panels, division 1 panels, division 2 panels
- On-screen diagnostics
- All software is designed and tested in-house; all systems can be executed online in our lab for diagnostics and troubleshooting
- Mini-pods for jack-up & surface BOP stacks using large bore BOPs with high volume

SUBSEA CONTROL PODS

Acoustic Pod

Our acoustic control system has a separate, stack-mounted acoustic pod for performing emergency disconnect operations.

The system uses an acoustic link from the surface rather than the dedicated electrical circuits used by the E/H backup.
Subsea Control Pods (con't)

**Multiplex Pod**

AXON's subsea control pod assembly includes a male pod/female receiver and houses the subsea valve control manifold. This compact design features subplate mounted control valves and pressure regulators for all subsea hydraulically controlled functions (96 in all). Moreover, two control pods on each stack provide system duplicity, and one receiver attaches to the Lower Marine Riser Package (LMRP).

**Piloted Hose-down Riser Pod**

The AXON hose-down-riser pod can be run or retrieved without the hydraulic hose bundle which is clamped to the riser instead of the pod wirelines.

**Piloted Hose-down Wireline Pod**

Our Type ‘80 subsea control pod provides maximum reliability and response during offshore drilling operations. This AXON control pod is designed to provide the high fluid volumes required by today’s large subsea BOP stacks.

The overall pod assembly consists of three sections: the retrievable valve block, riser-mounted blocks permanently mounted on the lower marine riser package, and stack-mounted blocks permanently mounted on the BOP stack.
SUBSEA HPU

Multiplex (MUX) & Pilot (Discrete)

AXON automatic HPUs allow you to rapidly charge accumulator banks with the electric motor driven, positive displacement, hydraulic pumps in pumping units. Designed to meet customer specifications and applicable regulations, each of these AXON HPUs operates at 3000 to 5000 psi and offers ease of use and long service life.

In addition, our HPUs for piloted systems include a control manifold integrated on the skid.

SURFACE CLOSING UNITS

AXON’s surface closing units feature a modular design with standardized components, dimensions and weights.

As per different working conditions, accumulator BOP control systems can be in pneumatic, hydraulic, electric or manual control.
Surface Closing Units (con’t)

AUXILIARY EQUIPMENT

Reels: Cable, Hotline, Piloted Hose, Riser Fill Valve

AXON’s hose and cable reels are equipped for safe handling and storage of subsea hose and cable bundles. Our reels are operated by an air motor with a chain and sprocket drive.

Furthermore, a disc brake system is used to stop the reel and a positive locking pin is used to keep the reel in place.
Auxiliary Equipment (con’t)

Diverter: Diverter Control Panel and Offshore Diverter Module

Our skid-mounted diverter control panel actuates solenoids to control the pilot-operated diverter valves. The diverter control panel features automatic sequencing and safety interlock circuits.

Remote Panel: Air, Electric, Touch Screen

As the primary control station, AXON’s driller’s control panel provides for full control of the BOP stack and selected auxiliary functions. The panel design permits well control operations as required, even in adverse conditions. Furthermore, units can be provided to meet requirements for hazardous area operation and all specifications and regulations.

Central Control Unit (CCU)

Our central control unit is the communications interconnect for all control panels and the subsea electronics. The unit is designed to operate in safe, non-hazardous areas, and contains control computers and network equipment.

Power Distribution Panel (PDP)

AXON’s power distribution panels provide high-quality electric power to the entire MUX control system. The system is designed for maximum reliability and serviceability.
Auxiliary Equipment (con’t)

Deadman Autoshear System (DMAS): Multiplex, Piloted

Our Deadman Autoshear System (DMAS) automatically shuts off the wellbore during an emergency. The system utilizes subsea accumulators to provide power and may be powered by a shared accumulator, such as an acoustic system that is not discharged into the main hydraulic supply.

The Deadman function closes the wellbore in the event of a simultaneous absence of hydraulic supply & signal transmission capacity in both subsea pods. The Autoshear system automatically shuts in the wellbore in the event of a Lower Marine Riser Package disconnect.

TR™ Regulators

AXON’s pressure-reducing regulator is an adjustable device used to control and maintain an outlet pressure to a secondary circuit that is lower than or equal to the supply pressure of the primary circuit.

This device senses any changes in the supply pressure and automatically compensates to maintain the constant function or outlet pressure as set by the operator. Moreover, the valves may be manually, pneumatically or hydraulically operated and are modular with multiple configuration.
Crown Block Savers

AXON’s crown block saver product line prevents the travelling block from running into the crown block. These crown block savers are available in standard, retractable, high-low and long-toggle valve options.

SPM Valves

Our SPM valves are high-pressure, high-flow, two-position, three-way directional control valves.

Furthermore, the design of the SPM valve is configured to an un-actuated and default position as either normally open or normally closed. Upon actuation, the valve configuration immediately moves to the opposite position (either closing off the flow of fluid or allowing full flow).

Accumulator Rack: Auxiliary, Diverter, HPU, Subsea

The AXON skid-mounted accumulator racks provide flexibility when space limitations do not allow the accumulators to be mounted on the master skid.

Additionally, our skid-mounted accumulator packages make it easier to increase the accumulator capacity when required by drilling program changes.
Auxiliary Equipment (con’t)

Alarm Modules

Available with electric or pneumatic operations, AXON’s alarm modules emit audible and visual alarm signals.

Ram Function Position Indication Status Modules

These systems allow for a true reading of the BOP stack functions through electro-hydraulic operations.

Nitrogen Back-up Systems

A reserve bank of nitrogen introduced into the manifold upon loss of pumping source, to provide a stored energy source to exert pressure upon hydraulic fluid for emergency control of the BOP stack.

UPS: Emergency Battery Power Pack, Multiplex

Our Uninterruptable Power Supply (UPS) provides at least two hours of emergency power for remote control panels, computers, and instrumentation.
Aftermarket is not an Afterthought™

AXON’s focus is to provide you with high-quality products that perform, as well as ensure you receive continued customer satisfaction through our aftermarket training, repair, and servicing. We are dedicated to providing you with an exceptional aftermarket experience in regards to both products and services.

From immediate service on equipment at your operating site to skilled remanufacturing service, you can count on AXON to provide the quick response, superior know-how, and true sensitivity to your schedule. Our pressure products group provides 24/7 field service and maintains a large inventory of the most requested parts to minimize downtime on your site. In addition, we can provide you with package solutions through our expansive product line within AXON’s six product groups.

Features / Benefits

- 24/7 on-site service
- Global repair and service center network
- Highly trained technicians with the ability to repair all AXON type and most leading manufacturers’ equipment
- Technology solutions that provide the most efficient and economical repair, recertification and service results
- Assembly, evaluation, and certification services to ensure your equipment meets requirements for safe operation
- Weekly customer asset reporting
- Quality oversight for load path components to ensure compliance with design requirements
- Aftermarket Toll Free Number: 855-442-9660
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