Wellhead Solutions

Control & Automation Solutions
Solutions for Optimizing Oil & Gas Operations
Introduction

INTECH's Wellhead Automation Solutions cover design, manufacturing, installation, commissioning and operation & maintenance of Wellhead Systems on any location worldwide. Our wellhead products include generic and custom built vendor-neutral solutions which range from hydraulic control panels and subsea master control stations to wellhead RTUs and injection skids.

Wellhead Control Panels

INTECH designs, engineers, builds and supplies control panels for wellhead control applications. INTECH's expertise covers three major types of panels:

- Electronic-Hydraulic Control
- Electro-Pneumatic Control
- Hydraulic Control

These panels can be built for both single-well and multi-well control configurations. Our engineers carry over 160 man-years of design and fabrication experience in building these panels for safe and reliable operations. Some key features of these panels include:

- SIL-3, Zone 1, certified components
- SCSSV, SVV, WVV, Choke Valve and other valve controls
- SCSSV’s - 7 minutes Equalization Logic incorporated
- Enclosed assembly with integrated HPU
- Hydraulic, Pneumatic, or Electric controls (with manual override option)
- Accumulators, filters and instrumentation for both LP and HP supply headers
- Sequential open/close logic for ESD
- Front Panel Displays
- Fusible Loop for local ESD

Intelligent Well Flow Controls

INTECH's Intelligent Well Flow Controls help to optimize well flow and can be operated automatically, manually, or remotely as part of an intelligent completion.

These sophisticated panels are designed for a smarter and fail-safe operation. They also have better reliability performance in the extreme climate conditions of well sites. They help to selectively control multiple producing zones thereby maximizing productivity.

- Backup and sustainable data logging which is capable of seamless integration with leading industrial SCADA and Historians
- Design based on industry’s leading manufacturers of Instrumentation and Control equipment meeting the needs of critical applications and ensuring reliability
- Active regional operation centers ensuring worldwide availability of resources

Remote Terminal Units (RTU): PCS, SIS, F&G

INTECH's wellhead solutions come with packaged RTUs providing:

- Seamless integration of PCS, SIS and F&G
- Stand-alone and integrated MCS operation capable
- Real-time data acquisition and monitoring for:
  - ESD conditions
  - Pump operators
  - Valve pressure
  - Remote monitoring (Telemetry Control)
- Conventional or solar powered solutions
- Latest communication options including GSM, LTE and Wireless Radio

Wellhead Process Package

INTECH's Wellhead Instrumentation Package includes:

(a) Gas Conditioning
(b) Wellhead Instrumentation
(c) Chemical Injection Skids

- Explosion proof ATEX, Baseefa, GOST-R, GOST-K certified packaged solutions
- Chemical injection to treat casing and pipeline corrosion
- Calibration & certification services
- Reliable and efficient moisture conditioning to typical pipeline requirements
- Efficient filtering of dust particles

Communication and Surveillance

INTECH helps keep your assets safe and enhance remote monitoring with solutions that include:

- Anti-intrusion
- CCTV
- Voice Communication
- Data Communication

Sub-Sea Master Control Stations (MCS)

INTECH provides sub-sea MCS solutions compliant with industry standards, covering:

- Customized hardware and software for complete design flexibility
- Expandable, redundant and fault tolerant design
- Suitable for operations in non-hazardous and air-conditioned environments
- Reliable PLC control with multiple workstation options
- Full diagnostics of power, communications, and Instrumentation
- Option for Distributed Control System (DCS) configuration or stand-alone panel control
- Superior reliability with worldwide customer support
INTECH - The “One Stop Shop”

INTECH is a "One Stop Shop" for automation and its Wellhead Solutions deliver on that promise. INTECH’s experienced engineers and field-proven designs guarantee that you get the best fit for all your Wellhead Automation requirements. Our vast range of wellhead solutions allows INTECH to execute projects as the "Main Automation Contractor".

- More than 150 man-years of evaluating, designing and manufacturing WHCP
- Certified Design (as per requirements)
- Customizable to field requirements
- Designed for extreme environments
- Sequential Startup and Shutdown

## Wellhead Specs

<table>
<thead>
<tr>
<th>Panel Certifications</th>
<th>UL</th>
<th>CSA</th>
<th>NSMA</th>
<th>IEC</th>
<th>FM</th>
<th>CE</th>
<th>NACE</th>
<th>ITVV</th>
<th>ATEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Thermal Management</td>
<td>Vortex coolers, Air conditioner, Fresh air cooling, Heat exchangers, Electric heaters, Panel insulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
* components designed for NACE compliance

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>Design Temperature</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min -50° C</td>
<td>Operating Temperature</td>
<td>Min -40° C</td>
</tr>
<tr>
<td>Max 85° C</td>
<td>Max 75° C</td>
<td></td>
</tr>
</tbody>
</table>

| Hydraulic Pressure | SCSSV, SSV, CV, UMV, WV upto 10,000 psi |
* 3,4,5 or greater valve circuit options  
* higher pressure systems can be supplied on request

<table>
<thead>
<tr>
<th>Electrical Power</th>
<th>120V AC / 60 Hz</th>
<th>240V AC / 50 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>380V AC / 60 Hz</td>
<td>440V AC / 50 Hz</td>
<td>Solar Powered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Corrosion resistant material suitable for hydraulic fluids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filler Breather</td>
<td></td>
</tr>
<tr>
<td>Flame Arrestor</td>
<td></td>
</tr>
<tr>
<td>Level Gauging</td>
<td></td>
</tr>
<tr>
<td>Magnetic Particle Collector</td>
<td></td>
</tr>
</tbody>
</table>
* components designed for NACE applications

<table>
<thead>
<tr>
<th>Pump Specs</th>
<th>Pump Drive</th>
<th>Electric</th>
<th>Pneumatic supply</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hydraulic</td>
<td></td>
<td>Compressed Air</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pneumatic</td>
<td></td>
<td>N2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hand Pump</td>
<td></td>
<td>Conditioned Raw Gas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hydraulic Fluid</th>
<th>Water Glycol Based</th>
<th>Solenoid Supply</th>
<th>EEXD 3 way Universal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Oil Based</td>
<td></td>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Material of Construction</th>
<th>Stainless steel (304, 316, 316L, etc.)</th>
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<tbody>
<tr>
<td>Marine grade copper-free aluminium light alloy</td>
<td></td>
</tr>
</tbody>
</table>
1) External epoxy painting with colour on request |
2) Internal anti-condensate painting |
3) Material selection can vary depending upon customer’s requirement |

* Raw gas conditioning package as pneumatic drive to remove condensate, metal and sand particles
“Congratulations on successful commissioning of Latif-14 Wellhead. Great Team work, dedication & good planning for achieving this goal in targeted time. Appreciation for all the team members directly & indirectly involved in this project”

Senior Control Systems Engineer

“The experience, knowledge and dedication of the INTECH Process Automation team was instrumental in executing a professional job towards the Control and Automation of the project”

Sr. Engineer

“The tight project schedule was duly met and you were able to match pace with drilling team to bring new wells on-line quite in time. The work was done in most professional manner and the shutdown period was minimum”

Sr. Engineer