XPIO Data Acquisition and Control Unit

MONITOR AND CONTROL DOWNHOLE GAUGES AND TOPSIDE INSTRUMENTATION

OVERVIEW
The Halliburton XPIO data acquisition and control system allows operators to monitor and control downhole gauges and topside instrumentation. Acquiring data at a rate of 0.5 seconds per gauge, the XPIO system is available in a range of capacities, and can accommodate either one or four well inputs and up to a maximum of sixteen gauges. A larger variant within the XPIO range is the UACU+, which extends capacity up to ten wells/forty gauges for a single unit. The UACU+ is fitted with a permanent downhole gauge interface card (PDGIC) module for each downhole channel. Downhole cable inputs are independent and fully isolated.

FEATURES
» Up to four permanent downhole gauge (PDG) communications channels (up to ten for UACU+)
» Five channels of 4-20 mA analog inputs (12 bit)
» Four channels of 4-20 mA analog outputs (16 bit)
» 8-MB onboard flash memory plus 4 GB of CompactFlash memory
» Modbus® RTU protocol support via the RS-485 or RS-232 port or via the TCP/IP port
» Modern communications support via the RS-232 port
» Two relay contacts
» Communications programs that allow full configuration of the unit

BENEFITS
» Controls PDGs, including the DataSphere® Opsis and Array and SmartLog™ gauges and surface instruments*
» Stores and displays data from Halliburton PDGs and surface sensors
» Interfaces with external systems, including third-party computers and distributed control systems (DCS)

ANALOG INPUTS
The XPIO system features five channels of 4-20 mA inputs (12 bit) that are fully configurable using the XPIO 2K PC program. Users can set the offset, span, and units of measure and then can choose to monitor them on the display or log them into memory.

ANALOG OUTPUTS
The XPIO system features four channels of 4-20 mA outputs (16 bit). Users can select the pressure, temperature, span, and offset of a PDG, and the XPIO system will drive the translated value onto an output as it is decoded from downhole.

*X: backwards compatible with previous generation ROC gauges
MEMORY LOGGING

The XPIO system includes 8 MB of onboard flash memory. A CompactFlash card extends the memory by 4 GB as standard. The standard 4-GB CompactFlash provides memory capacity to hold pressure and temperature data from two gauges at 1-second updates for more than 1 year.

The data is retrieved via an RS-232 port using the supplied PC program or by file transfer protocol (FTP) over the TCP/IP link and can easily be imported to other applications, such as a spreadsheet. Data is logged to memory at a maximum rate of once per second.

SERIAL COMMUNICATIONS

The XPIO system supports Modbus RTU protocol via its RS-485 or RS-232 port or via its TCP/IP port. These interfaces are fully configurable in terms of parity, baud rate, etc. As a slave device, the XPIO system provides gauge data (i.e., pressure and temperature) that can be polled as well as data from any of the 4-20 mA inputs. Time and date are also available.

MODEM SUPPORT

The XPIO system supports modem communications via the RS-232 port. Users can dial into the unit using the supplied XPIO 2K PC program or use the port to talk to Modbus over a radio modem, cellular modem, or regular modem.

PRESSURE-CONTROLLED RELAY CONTACTS

The XPIO system includes two relay contacts (1/2 A at 115 VAC), which are controlled by software. When a selected gauge’s pressure rises above or falls below a set pressure, the contact is closed. This feature is ideal for alarms and/or pump control.

WEB-INSTALLED PC APPLICATION

The XPIO system includes a web-installed application that provides for full configuration of the unit as well as data memory retrieval, real-time logging of data to the computer hard drive, and real-time data trending.

The application communicates with the XPIO system via a standard RS-232 port and runs under the latest version of Microsoft® Windows®. Modbus® is a registered trademark of Schneider Automation, Inc. Microsoft® Windows® is a registered trademark of Microsoft Corporation.

For more information, contact your local Halliburton representative or email completions@halliburton.com.