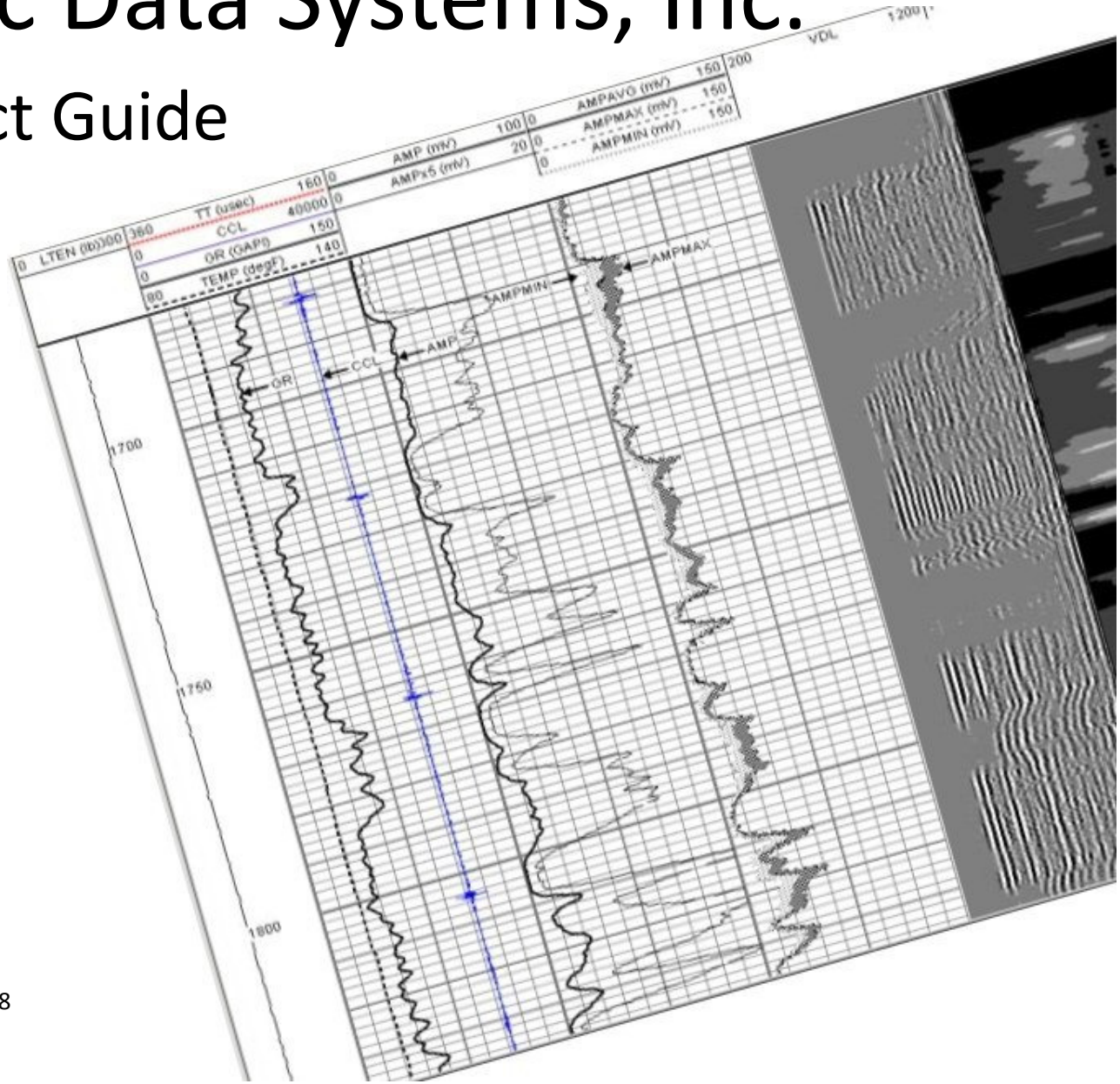
Scientific Data Systems, Inc.

Product Guide



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Cased Hole Logging System

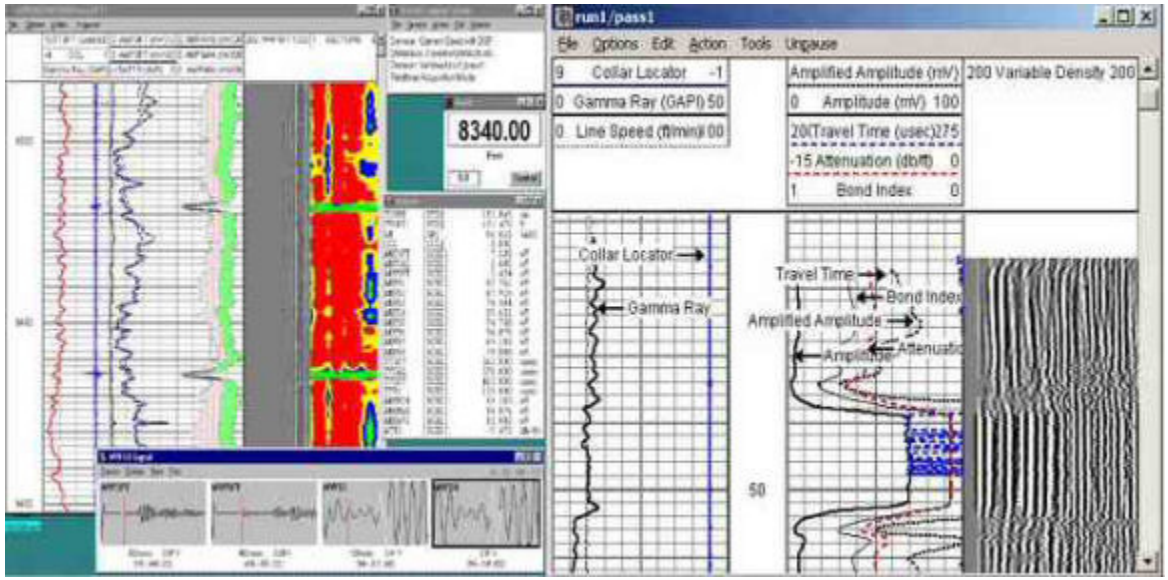
The **Warrior Well Logging System** employs advanced software and widely available hardware to provide a cost-effective solution to well logging requirements for both open and cased hole applications. Its main features include:

Multitasking System Using Microsoft Windows 2000, XP, Vista, and Windows 7.

The real time logging operation may be conducted at the same time as other tasks, such as data/fax transmission, plotting, log heading, job ticket preparation etc. The use of MS Windows ensures longevity, future enhancement and extensive hardware support for the system.

Graphical User Interface

The system is easy to use and the interface conforms to the popular MS Windows standard. Data monitoring is available in windows, which may be resized and repositioned as the user wishes. A typical user screen with scrolling log display and data monitors is shown below.



In example shown above, the operator is able to monitor the real time scrolling log, view any or all of the acoustic signals generated by a bond tool, and also monitor all the log outputs, including depth and line speed. Optionally raw sensor data may be displayed.

Multiple log plot windows may be opened for comparison of, for example, main and repeat log sections. Log plots may be paused and scrolled to any depth and annotations added, while data acquisition continues.

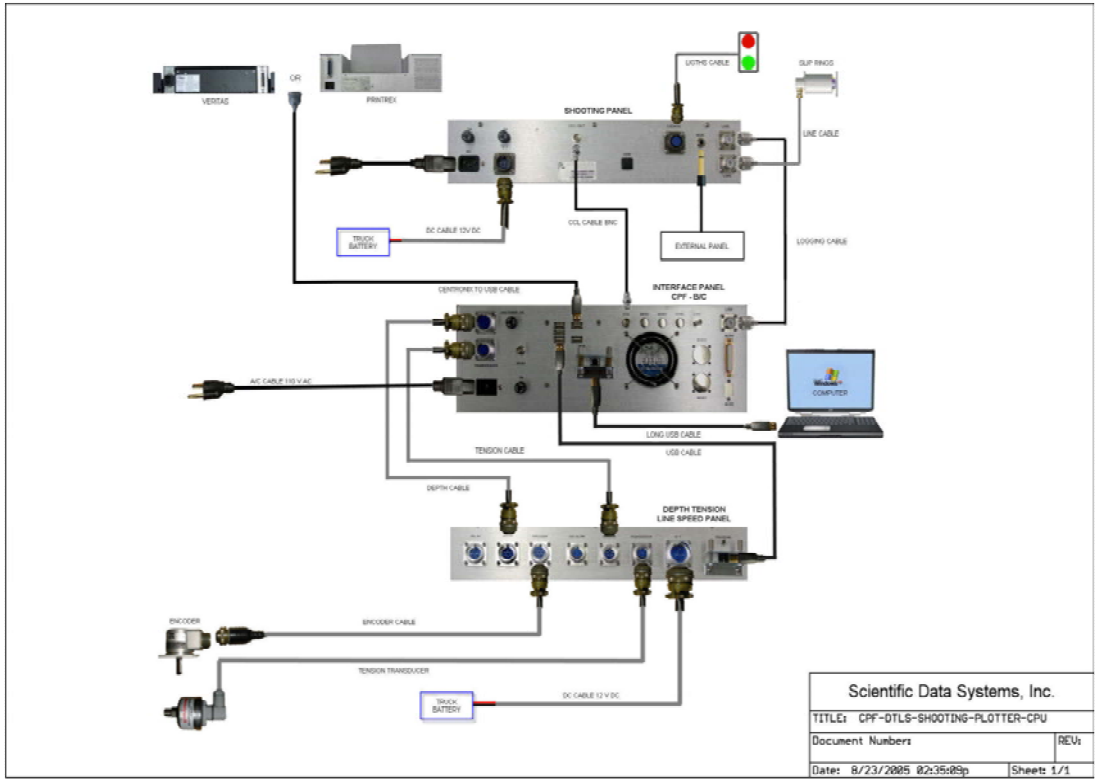
Depth correlation is achieved while logging, with the screen plot and system depth updated until correct depth is attained.

Log curve scales and other presentation parameters may be adjusted while logging and the screen plot redrawn until the desired output is obtained. The hardcopy plotter may be stopped and started at any time, presenting any interval with any desired presentation format.

The tool interface connects to the computer through the industry standard Universal Serial Bus (USB). The performance of the systems may be upgraded easily, as more powerful CPUs and other components become available. Configurations are available for rack mount, or notebook and other portable computers.

The **Warrior Well Logging System** consists of a tool interface and power supply panel, a computer, a printer and optional depth, line speed, line weight panel, and perforating power supply. The software supports most cased hole logging tools from a wide selection of tool manufacturers. The tool interface panel contains the necessary circuits to interface to most cased hole tools, both analog and digital. The depth encoder and line weight interfaces are built into the panel, as is the down hole tool power supply. All functions are digitally controlled from the software, with the power supply having a manual control mode. The panel incorporates data acquisition functions primary DSP based, that interface to the host computer through the industry standard Universal Serial Bus (USB). A seven port USB hub is also incorporated inside the panel allowing a single cable connection to the host computer.

The computer can be almost any machine running **Windows 2000, XP, Vista, and Windows 7 with a USB port**, i.e. rack mount or notebook computers may be used. A second monitor may usually be attached to provide a hoistman's or client's display. The system supports most thermal **well log** plotters and a selection of color printers. An optional depth, line speed and line weight panel is available. This panel provides 12 VDC powered, independent depth measurement. It connects to the host computer through the USB and can be synchronized from the host depth or the host depth may be read from the depth panel. An optional perforating power supply is available. The software provides all the usual well logging functions and supports tools from a wide selection of manufacturers.



Standard Cased Hole Panel CPF

A compact tool interface and power supply which is a suitable interface for the most downhole tools. It uses the latest Digital Signal Processing (DSP) technology to minimize hardware complexity and maximize flexibility. The interface may be configured for open and / or cased hole services, and incorporates expansion slots for future developments and upgrades.

Faceplate dimensions are 19” by 7”. Chassis is 17” by 17” by 7”, but you need to allow 2” to 3” more of rack depth for cable connections. The approximate weight of the panel is 45 pounds.



Standard Cased Hole Panel CPF - Rear of Panel

The rear of the standard interface panel is shown below. The encoder connection is a 7 pin Amphenol connector with a fused encoder power. The 5 pin pressure transducer is wired for a 4-20ma input, but modifications can be done to accept a 0-10 VDC input. The panel can be wired for 120 VAC or 220VAC input . Shown are the 5 USB ports from the internal USB hub with the clamp for the USB input from the computer. The passive CCL from an external shooting panel is brought into BNC CCL jack. The line connection can be made to either a BNC or a RG-59 UHF connector. There are two 4-20ma 5 pin connecters that can be used for well head pressure or grease pump pressure. There is a DB-25 connector with connections for to to 5 ADC inputs and 2 TTL counter channel inputs.



PPAB Pulse Interface Panel



The Pulse Interface panel is intended for use where all the capabilities of the Standard Interface Panel are not required. It is compatible with most pulse based logging tools.

There are standard depth and 4-20ma tension inputs. As well as an audio output, ten auxiliary analog inputs and two auxiliary counter inputs. The panels tool power supply is capable of delivering positive or negative 250v.

DTLS Depth Tension Line Speed Panel

The Depth, Line Speed and Line Tension Panel uses three industrial process meters to provide simultaneous digital readouts.
Meter 1 is setup in a counting mode and can accommodate virtually any depth encoder resolution.
Meter 2 is setup in a rate \ counter indicator mode and runs from the same encoder signals as Meter 1. It can display either depth or line speed.
Meter 3 senses a 4 - 20 ma signal from a pressure transducer connected to the measuring head weight indicator system, to display line tension.



The panel is intended to be powered by a 12 volt battery with no AC Input and contains power supply providing regulated 12.0 volts and 5.0 volts for indicator and encoder power. The panel also provides 24 volts excitation for the pressure transducer. The encoder pulses are buffered and output to the rear connectors for input to the logging system and are also converted to depth and direction signals and routed to the depth and line speed meters. A retransmitted 4 - 20 ma signal is also available at the rear panel also for input to the logging system. The depth and alarm signals can be set from the logging system via the USB connection.

The faceplate dimensions are 19” by 3.5”. The chassis is 17” by 3.5” by 8.25” deep, but allow 3” of additional rack depth for panel connections. The panel weight is 10 pounds.



Dual Depth Panel

Dual Depth Panel USB

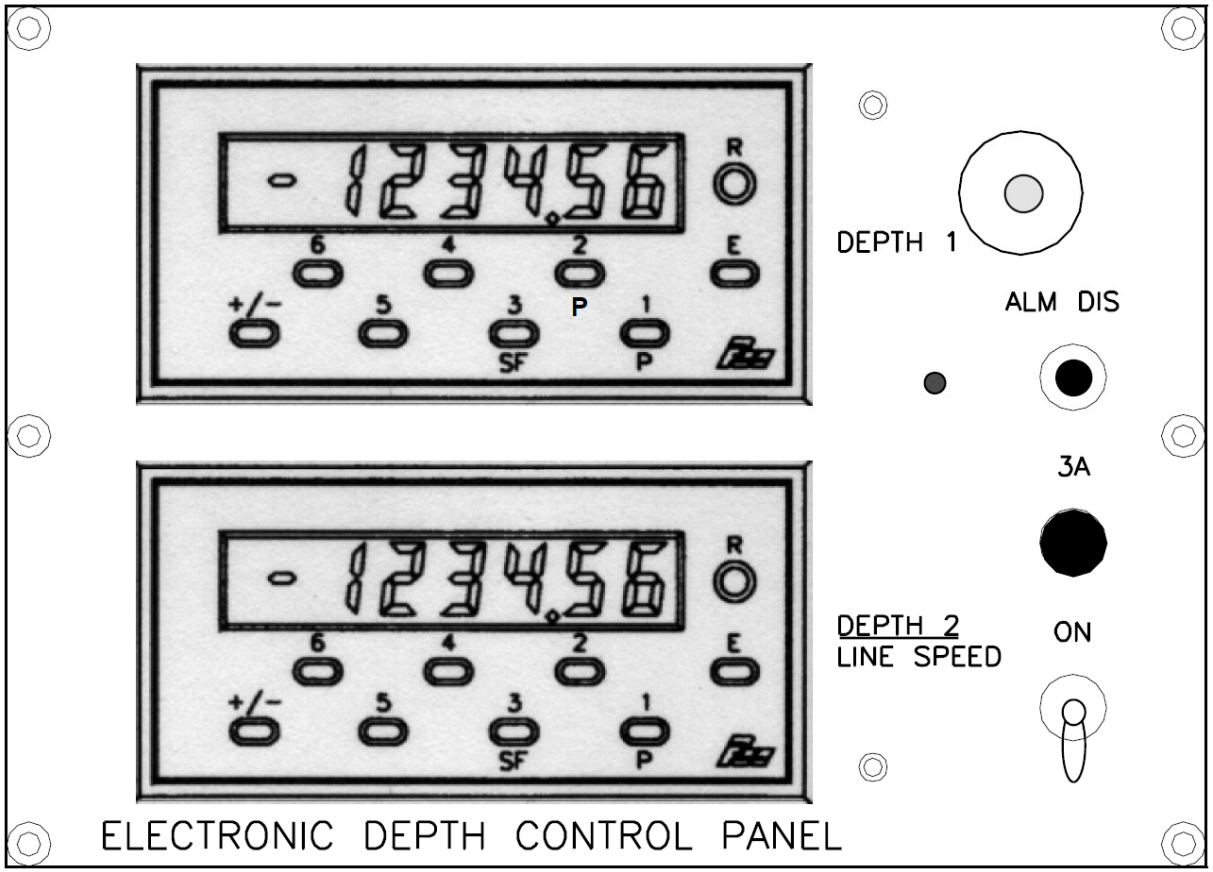
The Depth, Line Speed Panel uses two industrial process meters to provide simultaneous digital readouts

Meter 1 is setup in a counting mode and can accommodate virtually any depth encoder resolution.

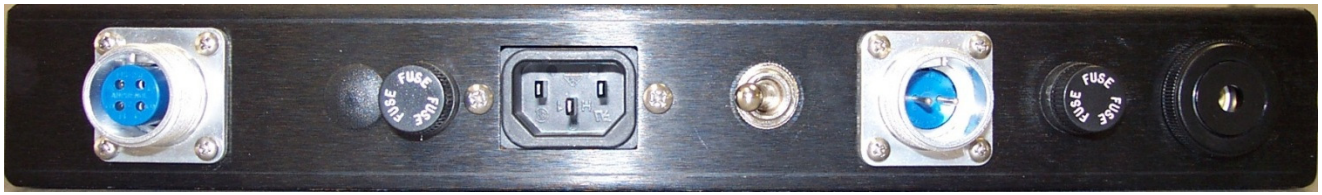
Meter 2 is setup in a rate\counter indicator mode and runs from the same encoder signals as Meter 1, it can display either depth or line speed.

The panel is intended to be powered by a 12 volt battery and contains power supply providing regulated 12.0 volts and 5.0 volts for indicator and encoder power.

The encoder pulses are converted to depth and direction signals and routed to the depth and line speed meters and are also buffered and output to the rear panel connectors for input to the logging system. The depth and alarms can be set from the logging system via the USB connection



SLAB Slick Line Acquisition Box



The SLAB box provides CCL, depth, line tension, surface pressure and strain gauge inputs in the standard configuration.

There are also four optional analog and counter inputs which makes this panel ideal for use with slick line and memory logging.

Systems mounted in portable racks



This example shows a PIP panel and Printrex Plotter mounted in a 8u portable rack. There is a 1u interface which brings all the necessary connections to the front od the panel for easy interface with the wireline, surface tension and logging system. A full range of sizes and configurations are available to meet your particular needs.

Available for resale



Probe shooting panel

http://www.probe1.com



Printrex plotters

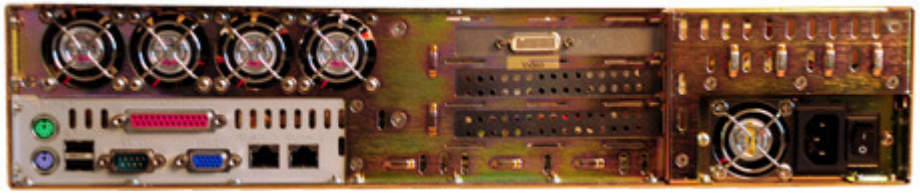
http://www.printrex.com

Rack mount Computers and Laptops

Systel 4230

19” X 19” x 3.5”





DURO 2U

DURO 4U

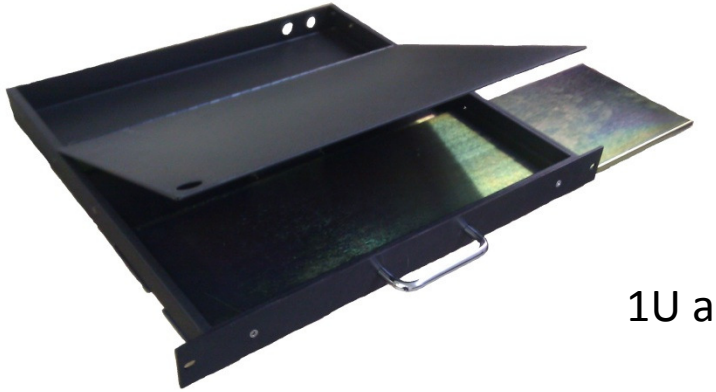


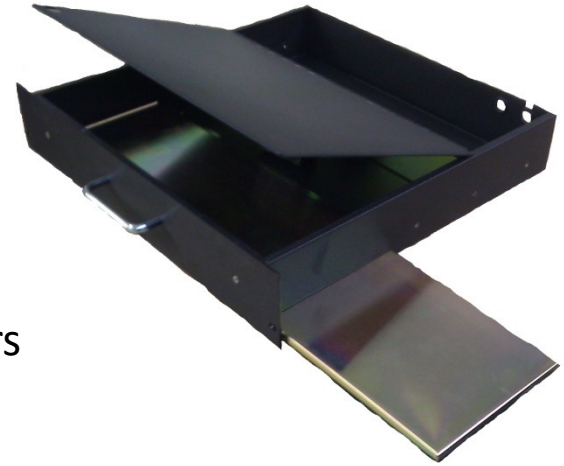


Dell Latitude Laptop



Miscellaneous Computer Accessories





1U and 2U laptop Drawers



19 inch rack mount Monitors

Accessories

Depth Encoders
BEI and SCANCON

Depth encoders and custom cables are available including the industry standard H20 series with a .37 inch sealed shaft 120 pulse per revolution dual channel output.
These encoders operate from 5-28 volts and when ordered with the custom cable they plug directly into any of the SDS data acquisition systems.

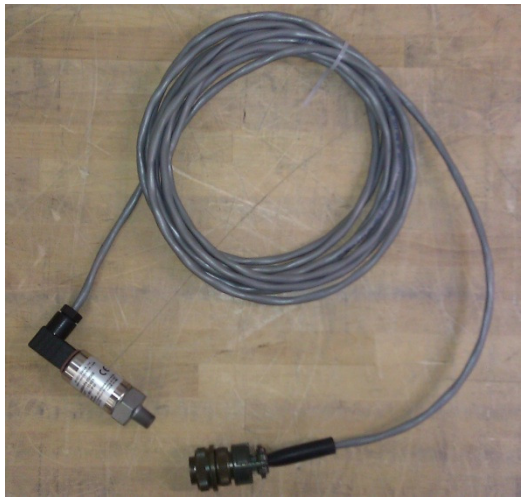








Surface Tension Transducer





Asco pressure transducer with custom cable can provide a surface tension readings on all SDS data acquisition systems when used with a hydraulic bellows type tension gauge. The series 44 transducer is a intrinsically safe 4-20ma 500 psi transducer. It has a 1/8” MNPT threaded connection and a Mini Din 43650 electrical interface.