

OPERATIONS AND MAINTENANCE MANUAL

WINCH OPERATORS PANEL

AMS3A344



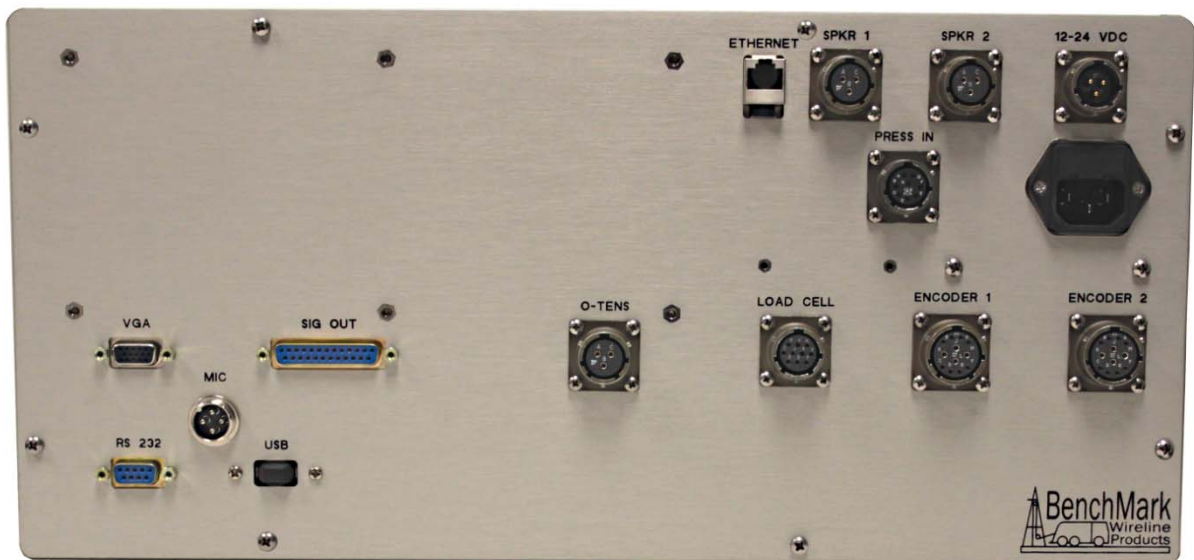
Hoistman's Display Program Rev: V5.01
Acquisition Program Rev: 2003.10

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1.0 INTRODUCTION

1.1 GENERAL DESCRIPTION



1.1 GENERAL DESCRIPTION continued

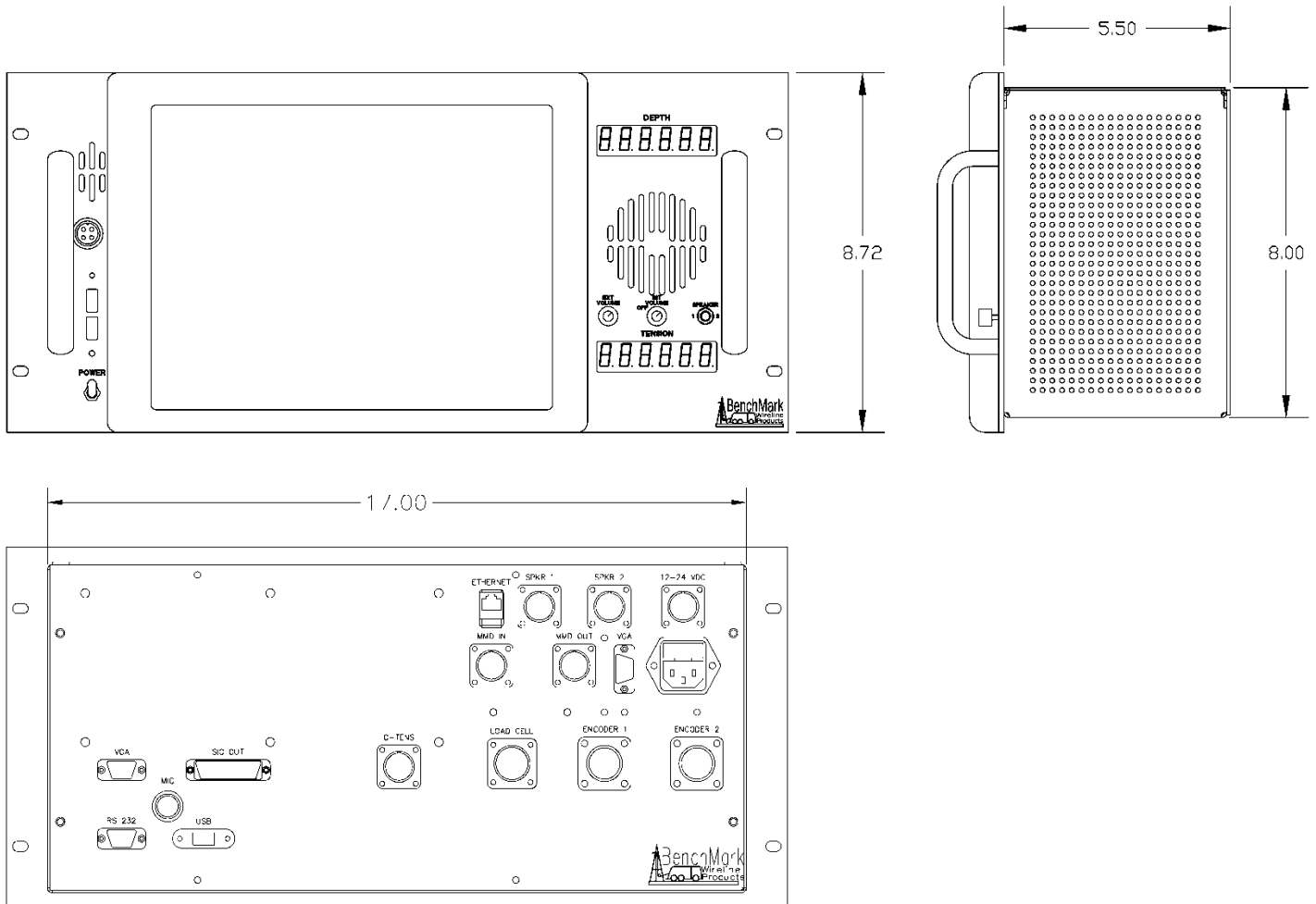
This panel is used to acquire and display depth and tension data from a wireline logging winch unit. The panel provides the operator a means to set and make adjustments to the data as necessary. Depth is displayed from data provided from an encoder mounted on a measuring device. The tension data is provided by a load pin and is also passed through to the acquisition system. The panel will operate with the BenchMark Dual Wheel Measuring Devices for slick line, braided line, and cased hole e-line services.

The system consists of two main components, the real time acquisition board and the PC. The acquisition board provides power to and processes the signals from the encoders, load pin, and magnetic mark detector. This board operates independent from the PC and is instantly on when power is applied. It also is connected to displays for depth and tension. This allows depth and tension to be displayed immediately on power up and always be displayed regardless of the PC status.

The PC uses an Intel based high speed processor running MS Windows XP embedded. The PC includes a color touch screen for operator input and command entry. The PC is Ethernet ready for connection to the internet for remote display and control.



1.2 TECHNICAL SPECIFICATIONS



WEIGHT:

PANEL ONLY: 10 LBS 4.55 KG

POWER REQUIREMENTS:

INPUT VOLTAGE: 12 – 24VDC

INPUT CURRENT: 4 AMPS STARTUP SURGE

3 AMPS NORMAL OPERATION

1.2 TECHNICAL SPECIFICATIONS continued

OPERATING TEMPERATURE

Min	Max
14	149 degrees F
-10	65 degrees C

STORAGE TEMPERATURE

Min	Max
-22	158 degrees F
-30	70 degrees C

1.3 HARDWARE FEATURES

12 - 24 VDC Power Input
110/220 VAC 50/60 HZ

Internal PC board

- Intel based personal computer board
- 4 gb solid state media device
- Embedded windows XP or Windows 7 operating system
- Five USB ports (Two inside, two in front, and one on the back)
- 1 RS232 port
- RJ 45 Ethernet port
- USB Mouse / Keyboard included

Color Display

- TFT LCD
- Backlit
- 400 NITS Sunlight readable

Touch Screen Interface (replaces current key pad)

- 5 wire resistive
- USB interface

Real Time Acquisition board

- Kerr Measurement Systems proprietary design
- 8051 Microprocessor based
- Provides power to encoders, load cell
- Processes encoder quadrature, load cell
- Runs independent of PC board
- Connected to digital displays for real time display of depth and tension

Overtension Relay Contact Closure output

Analog output interface

- Encoder quadrature output
- 0 – 10vdc tension output
- 4-20ma tension output

Dual Pressure signal inputs

A second 4gb solid state media device is provided for backup redundancy.
Refer to 3.1.29 for information.

1.4 USER INTERFACE FEATURES

Total Tension numeric graphic
Incremental or Differential tension meter graphic
Meter reset button graphic (touch screen control)

Over_tension Warnings and Shutdown settings for both Differential and Total Tension readings (touch screen activated)

Tension Calibration Setup Window (touch screen control)

Encoder Resolution Settings (PPR value set by touch screen control)

Approaching Surface

Max Depth

Set Down

1.5 OBTAINING TECHNICAL ASSISTANCE

Call BenchMark Wireline Products Inc. at +1 281 346 4300

Or contact by email mail@benchmarkwireline.com

Or fax in request at +1 281 346 4301

Information is also available on website www.benchmarkwireline.com

Parts can be ordered by email, phone, or fax

Equipment can be returned for repair and maintenance. Please notify us by

Phone, email, or fax before sending any equipment.

To return equipment to BenchMark, ship it to:

BenchMark Wireline Products

36220 FM 1093

Simonton, Texas 77476

U.S.A.

1.6 BIOS INSTRUCTIONS

Note – Menu items highlighted in **YELLOW** are the custom settings for this panel.

1.0 BIOS

AwardBIOS 6.0 is a full-featured BIOS provided by Advantech to deliver superior performance, compatibility, and functionality to industrial PCs and

embedded boards. Its many options and extensions let you customize your products to a wide range of designs and target markets.

The modular, adaptable AwardBIOS 6.0 support the broadest range of third-party peripherals and all popular chipsets, plus Intel, AMD, nVidia, VIA, and compatible CPUs from 386 through Pentium, AMD Geode, K7 and K8 (including multiple process platforms), and VIA Eden C3 and C7 CPUs.

You can use Advantech's utilities to select and install features that suit your needs and your customer's needs.

1.1 BIOS Setup

The PCM-9361 system has AwardBIOS 6.0 built-in, which includes a CMOS SETUP utility that allows users to configure setting as required or to activate certain system features.

The CMOS SETUP saves configuration setting in the CMOS RAM of the mother-

board. When the system power is turned off, the onboard battery supplies the necessary power to the CMOS RAM so that setting are retained.

To access the CMOS SETUP screen, press the button during the power-on BIOS POST (Power-On Self Test).

1.6 BIOS INSTRUCTIONS continued

CMOS SETUP Navigation and Control Keys:

-	< >> >> >> >	Move to highlight item
-	<Enter>	Select Item
-	<Esc>	Main Menu – Start Quit sequence
-		Sub Menu – Exit the current page and return to level above
-	<Page Up/+>	Increase the numeric value or make changes
-	<Page Down/->	Decrease the numeric value or make changes
-	<F1>	General help, for the Setup Sub Menu
-	<F2>	Item Help
-	<F5>	Load Previous Values
-	<F7>	Load Optimized Default
-	<F10>	Save all CMOS changes
-		

1.6 BIOS INSTRUCTIONS continued

1.2.1 Main Menu

Press the Key during startup to enter the BIOS CMOS Setup Utility; the Main Menu will appear on the screen. use arrow keys to highlight the desired item, and press <Enter> to accept, or enter the sub-menu.

Phoenix - Award BIOS CMOS Setup Utility

Standard CMOS Features	PC Health Status
Advanced BIOS Features	Frequency/Voltage Control
Advanced Chipset Features	Load Optimized Defaults
Integrated Peripherals	Set Password
Power Management Setup	Save & Exit Setup
PnP/PCI Configurations	Exit Without Saving
Esc : Quit F9 : Menu in BIOS	: Select Item
F10 : Save & Exit Setup	

Time, Date, Hard Disk Type...

- **Standard CMOS Features**
This setup page included all the features for standard CMOS configuration.
- **Advanced BIOS Features**
This setup page includes all the features for advanced BIOS configuration.
- **Advanced Chipset Features**
This setup page includes all the features for advanced chipset configuration.
- **Integrated Peripherals**
This set up page includes all onboard peripheral devices.
- **Power Management Setup**
This setup page includes all the power management items.
- **PnP/PCI Configuration**
This set up page includes PnP OS and PCI device configuration.
- **PC Health Status**
This setup page includes the system auto-detect CPU and system temperature,

1.6 BIOS INSTRUCTIONS continued

voltage, and fan speed.

- **Frequency/Voltage Control**

This setup page includes CPU host clock control, frequency ratio and voltage.

- **Load Optimized Defaults**

This selection loads optimized values for best system performance configuration.

- **Set Password**

Establish, change or disable password.

- **Save & exit Setup**

Save CMOS value setting to CMOS and exit BIOS setup.

- **Exit Without Saving**

Abandon all CMOS value changes and exit BIOS setup.

1.2.2 Standard CMOS Features

Phoenix – AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (MM:dd:yy)	Thur, Jan 8 2009	Item Help
Time (hh:mm:ss)	9 : 44 : 49	
IDE Channel 0 Master		
IDE Channel 0 Slave		Change the day,
	mo.,	
IDE Channel 1 Master		year and century
IDE Channel 1 Slave		
Drive A		
Video	[EGA/VGA}	
Halt On		
Base Memory	640K	
Extended Memory	15360kK	
Total Memory	16384K	

:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit
F1:GeneralHelp
F5:Previous Values F7: Optimized Defaults

- **Date**

The date format is <weekday>, <month>, <day>, <year>.

1.6 BIOS INSTRUCTIONS continued

Weekday	From Sun to Sat, determine and display by BIOS only
Month	From Jan to Dec
Day	From 1 to 31
Year	From 1999 to 2098

- **Time**

The times format in <hours> <minute><second>, base on the 24-hour time.

- **IDE Channel 0/1 Master/Slave**

IDE HDD Auto-Detection-Press "Enter" for automatic device detection.

- **Drive A**

The Item identifies the type of floppy disk drive A or drive B

None	No floppy drive installed
360k, 5.25"	5.25 inch PC-type standard drive; 360K byte capacity
1.2M, 5.25"	5.25 inch AT-type high-density drive; 1.23M byte capacity
720K, 3.5"	3.5 inch double-sided drive; 720K byte capacity
1.44M, 3.5"	3.5 inch double-sided drive; 1.44M byte capacity
2.88M, 3.5"	3.5 inch double-sided drive; 2.88M byte capacity

- **Halt on**

This item determines whether the computer will stop if an error is detected during power up.

No Errors The system boot process will not stop for any error

All Errors Whenever the BIOS detects a non-fatal error the system boot process will be stopped.

All, But Keyboards The system boot process will not stop for a keyboard error, but will stop for all other errors. (Default value)

All, But Diskette The system boot process will not stop for a diskette error, but will stop for all other errors.

All, But Disk/Key The system boot process will not stop for a keyboard or disk error, but will stop for all other errors.

- **Base Memory**

Displays the amount of base (or conventional) memory installed in the system.

- **Extended Memory**

Display the amount of extended memory (above 1 MB in CPU's memory address map) installed in the system.

- **Total Memory**

1.6 BIOS INSTRUCTIONS continued

Display the total system memory size.

1.2.3 Advanced BIOS Features

Phoenix – AwardBIOS CMOS Setup Utility

Advanced BIOS Features

Item	Value	Item Help
CPU Feature	[Press Enter]	Item Help
Hard Disk Boot Priority	[Press Enter]	Menu Level
Virus Warning	[Disabled]	
CPU L1 & L2 Cache	[Enabled]	
CPU L3 Cache	[Enabled]	
Hyper-Threading Technology	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Hard Disk]	
Second Boot Device	[Hard Disk]	
Third Boot Device	[CD Rom]	
Boot Other Device	[Enabled]	
Boot Up Floppy Seek	[Disabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	[Setup]	
APIC Mode	[Enabled]	

:Move Enter:Select /-/PU/PD:Value F10:Save ESC:Exit F1:General
Help F5:Previous Values F7: Optimized Default

- **CPU Feature**
This item allows the user to adjust CPU setting such as CPU ratio, VID and Thermal, and special features like XD flag.
- **Hard Disk Boot Priority**
This Item allows the user to select the boot sequence for system devices such as HDD, SCSI, and RAID.
- **CPU L1 & L2 Cache [Enabled]**
This item allows user to enable CPU L2 cache and ECC checking function.
- **CPU L3 Cache [Enabled]**
This Item allows the user to enable/disable CPU L3 cache.
- **Hyper-Threading Technology [Enabled]**
This item allows the user to enable/disable Hyper-threading support for the Intel Pentium 4 processor with HT Technology.
- **Quick Power On Self Test [Enabled]**

1.6 BIOS INSTRUCTIONS continued

This field speeds up the Power-On Self Test (POST) routine by skipping re-testing a second, third and fourth time. The default setting is enabled.

- **First / Second / Third / Other Boot Drive**

Hard Disk	Sets boot priority for the hard disk.
CDROM	Sets boot priority for CDROM.
USB-FDD	Sets boot priority for USB-FDD.
USB-ZIP	Sets boot priority for USB-ZIP.
USB-CDROM	Sets boot priority for USB-CDROM.
LAN	Sets boot priority for LAN.
Disabled	Disables this boot function.

- **Boot Up NumLock Status [On]**
This item allows the user to activate the Number Lock Key at system boot.

- **Gate Azo Option [Fast]**
This item allows the user to switch on or off Azo control by port g2.

- **Typematic Rate Setting**
This item allows the user to set the two typematic control item.
This field controls the speed of
 - Typematic Rate (Chars/Sec)
This item controls the speed at which the system registers auto repeated key-strokes.
The eight settings are: 6,8,10,12,15,20,24 and 30.
 - Typematic Delay (Msec)
This item sets the key press delay time before auto repeat begins. The four delay rate options are: 250,500,750 and 1000.

- **Security Option [Setup]**

System	System requires correct password before booting, and also before permitting access to the Setup page.
Setup	System will boot, but requires correct password before permitting access to Setup. (Default value)

- **APIC Mode [Enabled]**
This item allows the user to enable/disable the "Advanced Programmable Interrupt Controller". APIC is implemented in the motherboard and must be supported by the operating system; it extends the number of IRQs available.

- **MPS Version Control for OS [1.4]**
This item sets the operating system multiprocessor support version.

- **OS Select For DRAM >64 MB [Non-OS2]**
Select OS2 only if the system is running the OS/2 operating system with greater than 64 MB of RAM on the system.

1.6 BIOS INSTRUCTIONS continued

1.2.4 Advanced Chipset Features

Phoenix – AwardBIOS CMOS Setup Utility

Advanced Chipset Features

DRAM Timing Selectable	[By SPD]
CAS Latency Time	[Auto]
DRAM RAS# to CAS# Delay	[Auto]
DRAM RAS# Precharge	[Auto]
Precharge delay (tRAS)	[Auto]
System Memory Frequency	[Auto]
SLP_S4# Assertion Width	[4 to 5 Sec.]
System BIOS Cacheable	[Enabled]
Video BIOS Cacheable	[Disabled]
Memory Hole At 15-M-16M	[Disabled]
PCI Express Root Port Func	[Press Enter]

** VGA Setting **

On-Chip Frame Buffer Size	[8MB]
DVMT Mode	[DVMT]
DVMT/FIXED Memory Size	[128MB]
Boot Display	[CRT+LFP]
Panel Type	[640x480 , 18bits]

:Move Enter>Select +/-/PU/PD:Value F10:Save ESC:Exit F1:GeneralHelp
F5:Previous Values F7: Optimized Defaults

Note ! The "Advanced Chipset Features" screen controls the configuration of the board's chipset register setting and performance tuning – the options on this screen may vary depending on the chipset type. It is strongly recommended that only technical users make changes to the default setting.

- **DRAM Timing Selectable** [By SPD]
This item enables users to set up the optimal timing for items 2 through 5, system default setting of "By SPD" to follow the SPD information and ensure the system running in stable and optimal performance.
- **CAS Latency Time** [Auto]
This item enables users to set the timing delay in clock cycles before SDRAM start a read command after receiving it.

1.6 BIOS INSTRUCTIONS continued

- **DRAM RAS# to CAS# Delay** [Auto]
 This item enables users to set the timing of the transition from RAS (row address strobe) to CAS (column address strobe) as both rows and column are separately addressed shortly after DRAM is refreshed.
- **DRAM RAS# Precharge** [Auto]
 This item enables users to set the DRAM RAS# precharge timing, system default is setting to "Auto" to reference the data from SPD ROM.
- **Precharge Delay (tRAS)** [Auto]
 This item allows users to adjust memory precharge time.
- **System Memory Frequency** [Auto]
 This item allows users to adjust memory frequency to improvement performance.
- **SLP_S4# Assertion Width** [4 to 5 Sec]
 This allows users to set the SLP_S4# Assertion Width.
- **System BIOS Cacheable** [Enabled]
 This item allows the system BIOS to be cached to allow faster execution and better performance.
- **Video BIOS Cacheable** [Disabled]
 This item allows the video BIOS to be cached to allow faster execution and better performance.
- **Memory Hole At 15M-16M** [Disabled]
 This item reserves 15MB-16MB memory address space to ISA expansion cards that specifically require the setting. Memory from 15MB-16MB will be unavailable to the system because of the expansion cards can only access memory at this area.
- **PCI Express Root Port Fun** [Press Enter]
 This item allows the user to adjust the PCIE port to on, off, or auto.
- **On-Chip Frame Buffer Size** [8MB]
 This item allows the user to adjust on-chip graphics of memory buffer.
- **DVMT Mode** [DVMT]
 This item allows the user to adjust Intel's Dynamic Video Memory Technology (DVMT). Bios provide three option to choose (DVMT, FIXED and Both).

1.6 BIOS INSTRUCTIONS continued

- **DVMT/FIXED Memory Size [128MB]**
This item allows the user to adjust DVMT/FIXED graphic memory size.
- **Boot Display [CRT]**
This item allows the user to decide which display mode to use for the boot display.
- **Panel Type [640 x 480, 18bits]**
This item allows the user to adjust panel resolution.

1.2.5 Intergrated Peripherals

Phoenix – AwardBIOS CMOS Setup Utility Integrated Peripherals

On Chip IDE Device	[Press Enter]	Item Help
OnBoard Device	[Press Enter]	
Super IO Device	[Press Enter]	Menu Level
USB Device Setting	[Press Enter]	

:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

Note: The "Integrated Peripherals" screen controls chipset configuration for IDE, ATA, SATA, USB, AC97, MC97 and Super IO and Sensor devices. The options on this screen vary depending on the chipset.

- **OnChip IDE Device**
This item enables users to set the Onchip IDE device status, including IDE devices and setting PIO and DMA access modes. Some chipsets support newer SATA devices (Serial-ATA).
- **Onboard Device**
This item enables users to set the Onboard device status, includes enable USB, AC97, MC97 and LAN devices.
- **Super IO Device**
This item enables users to set the Super IO device status, includes enable Floppy, COM, LPT, IR and control GPIO and Power fail status.
- **USB Device Setting**
This Item enables users to set the USB Device type.

1.6 BIOS INSTRUCTIONS continued

Sort-Off by PWR-BTTN	[Instant-Off]
PWRON After PWR-Fail	[Former-Sts]
Wake-UP by PCI card	[Enabled]
Power On by Ring	[Enabled]
Resume by Alarm	[Disabled]
Date (of Month) Alarm	o
Time(hh:mm:ss) Alarm	o : o : o

** Reload Global Timer Events **

:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:GeneralHelp
F5:Previous Values F7: Optimized Defaults

Note: The " Power Management Setup" screen allows configuration of the system for effective energy savings while still operating in a manner consistent with intended computer use.

- **ACPI Function [Enabled]**
- This item defines the ACPI (Advanced Configuration and Power Management) feature that makes hardware status information available to the operating system, and communicate PC and system devices for improving the power management.
- **ACPI Suspend Type [S3 (STR)]**
This item allows user to select sleep state when the Computer is in suspend mode.

S1 (POS) The suspend mode is equivalent to a software power down.

S3 (STR) The system shuts down with the exception of a refresh current to

the system memory.

- **Run VGA BIOS if S3 Resume [Auto]**
This item allows the user to enable run VGA bios if system resume from S3
- **Power Management [Min Savings]**
This item allows user to select system power saving mode.

Min Saving Minimum power management. Suspend Mode=1 hr.

Max Saving Maximum power management. Suspend Mode=1 min.

User define Allows user to set each mode individually.

Suspend Mode= Disabled or 1 min – 1hr.

- **Video Off Method [DPMS]**
This item allows the user to determine the manner in which the monitor is blanked.

1.6 BIOS INSTRUCTIONS continued

V/H SYNC+Blank This option will cause the system to turn off vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen This option only writes blanks to the video buffer.

DPMS Initial display power management signaling.

- **Video Off In suspend [Yes]**
This item allows user to turn off video during system enter suspend mode.
- **Suspend Type [Stop Grant]**
This item allows user to determine the suspend type.
- **Modem use IRQ [3]**
This item allows user to determine the IRQ which the MODEM can use.
- **Suspend Mode [1 Hour]**
This item allows user to determine the time of system inactivity, all devices except the CPU will be shut off.
- **HDD Power Down Mode [15]**
This item allows user to determine the time of system inactivity, the hard disk drive will be powered down.
- **Soft-Off by PWR-BTTN [Instant-Off]**
This item allows the user to define the power button functions.

Instant-Off Press the power button to power off instantly

Delay 4 Sec Press and hold the power button for 4 sec to power off.

- **PWRON After PWR-Fail [Former-Sts]**
This item allows the user to select recovery after power fail function, this function depends on the chipset.
- **Wake-Up by PCI card [Enabled]**
This item allows user to defines PCI cards to wake up the system from the suspend mode.
- **Power On by Ring [Enabled]**
This item allows user to define the system will resume by activating of modem ring.
- **Resume by Alarm [Disabled]**
This item allows user to enable and key in Date/time to power on system

Disabled Disable this function

Enabled Enable alarm function to power on system

Day (of month) Alarm 1-31

Time (HH:MM:SS) Alarm (0-23) : (0-59) : (0-59)

1.6 BIOS INSTRUCTIONS continued

1.2.7 PnP/PCI Configurations

Phoenix – AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

	Init Display First	[PCI Slot]	Item Help
	Reset Configuration Date	[Disabled]	
	Resources Controlled By	[Auto(ESCD)]	Menu Level
X	IRQ Resources	Press Enter	
	PCI/VGA Palette Snoop	[Disabled]	
	INT Pin 1 Assignment	[Auto]	
	INT Pin 2 Assignment	[Auto]	
	INT Pin 3 Assignment	[Auto]	
	INT Pin 4 Assignment	[Auto]	
	INT Pin 5 Assignment	[Auto]	
	INT Pin 6 Assignment	[Auto]	
	INT Pin 7 Assignment	[Auto]	
	INT Pin 8 Assignment	[Auto]	
	** PCI Express relative items **		
	Maximum Payload Size	[4096]	

:Move Enter: Select +/-?PU/PD: Value F10:Save ESC: Exit F1: General Help

F5: Previous Values F7: Setup Defaults C"

Note! This "PnP/PCI Configurations" option sets up the IRQ and DMA (both PnP and PCI bus assignments).

- **Init Display First [PCI Slot]**
This item is setting for start up video output from PCI or Onboard device.
- **Reset Configuration Date [Disabled]**
This item allow user to clear any PnP configuration data stored in the BIOS.
- **Resources Controlled By [Auto(ESCD)]**
 - IRQ Resources
This item allows you respectively assign an interruptive type for IRQ-3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.
 - DMA Resources
This item allows you respectively assign an interruptive type for DMA, 0, 1, 2, 3, 4, 5, 6, and 7.

1.6 BIOS INSTRUCTIONS continued

- **PCI VGA Palette Snoop [Disabled]**
The item is designed to solve problems caused by some non-standard VGA cards. A built-in VGA system does not need this function.
- **INT Pin 1-8 Assignment [Auto]**
This item allows the user to select the interrupt request (IRQ) assigned to a device connected to the PCI interface on your system.
- **Maximum Payload Size [4096]**
This item allows the user to adjust maximum RLP (Transaction Layer Packet) payload size.

1.2.8 PC Health Status

Phoenix – AwardBIOS CMOS Setup Utility
PC Health Status

Shutdown Temperature	[Disabled]	Item Help
Current CPU Temperature		
Current CPU2 Temperature		Menu Level
VCC		
2.5 V		
5 V		
12 V		
Fan1 Speed		

:Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1: General Help
F5: Previous Values F7: Optimized Defaults

Note! This "PC Health Status" page reports the thermal, fan and voltage status of the board. This page may vary according to the chipset installed.

- **Current CPU Temperature [Show Only]**
This item displays current CPU temperature.
- **FAN 1 Speed [Show Only]**
This item displays current system FAN(s) speed(s)
- **VCC/ 2.5 V/ 5V/ 12V [Show Only]**
This item displays current CPU and system voltage.

1.2.9 Frequency/Voltage Control

Phoenix – AwardBIOS CMOS Setup Utility		
Frequency/Voltage Control		
CPU Clock Ratio	[6 X]	Item Help
Auto Detect PCI Clk	[Enabled]	

1.6 BIOS INSTRUCTIONS continued

Spread Spectrum [Disabled] Menu Level
CPU Host/SRC/PCI Clock [Default]

:Move Enter: Select +/-/PU/PD: Value F10: Save ECS: Exit F1: General Help
F5: Previous Values F7: Optimized Defaults

Note! The "Frequency/Voltage Control" screen controls the CPU host and PCI frequency. The options on this page vary depending on the chipset; items show up according to installed CPU capacities.

- **CPU Clock Ratio [6X]**
This item enables users to set the CPU clock ratio by manually.
- **Auto Detect PCI Clk [Enabled]**
This item enables users to set the PCI Clk either by automatic system detection or manually.
- **Spread Spectrum [Disabled]**
This item enables users to set the spread spectrum modulation.
- **CPU Host/SRC/PCI Clock [Default]**
This item enables users to set the CPUhost/SRC/PCI clock.

1.2.10 Load Optimized Defaults

Phoenix – AwardBIOS CMOS Setup Utility

- Standard CMOS Features PC Health Status
- Advanced BIOS Features Frequency Control
- Advanced Chipset Features Load Setup Defaults
- Integrated Peripherals Set Password
- Power Management
- PnP/PCI Configuration

Esc : Quit F9 : Menu in BIOS : Select Item
F10 : Save &Ext Setup

Load Setup Defaults

1.6 BIOS INSTRUCTIONS continued

Note! "Load Optimized Defaults" loads the default system values directly from ROM. If the record created by the setup program should ever become corrupted (and therefore unusable), select Load Setup Defaults to have these default values load automatically for the next bootup.

1.2.11 Set Password

Phoenix – AwardBIOS CMOS Setup Utility

- Standard CMOS Features
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PnP/PCI Configuration
- PC Health Status
- Frequency Control
- Load Setup Defaults
- Set Password
- Save & Exit Setup

Esc : Quit F9 : Menu in BIOS : Select Item
 F10 : Save & Exit Setup

Change/Set/Disable Password

Note! To enable this feature, you should first go to the "Advanced BIOS Features" menu, choose the Security Option, and select either System or Setup, depending on which aspects you want password protected. System requires a password both to boot the system and to enter Setup. Setup requires a password only to enter Setup. A password may be at most 8 characters long.

To Establish Password

1. Choose the Set Password option from the CMOS Setup Utility Main Menu and press <Enter>
2. When you see Enter Password, enter the desired password and press <Enter>.
3. At the Confirm Password prompt, retype the desired password, then press <Enter>.

1.6 BIOS INSTRUCTIONS continued

4. Select Save to CMOS and exit, type <Y>, then <Enter>.

To Change Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see Enter Password, enter the existing password and press <Enter>.
3. You will see the Confirm Password prompt, type it in again, and press <Enter>.
4. Select Set Password again, and at the Enter Password prompt, enter the new password and press <Enter>.
5. At the Confirm Password prompt, retype the new password, and press <Enter>.
6. Select Save to CMOS and exit, type <Y>, then <Enter>.

To Disable a Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see the Enter Password prompt, enter the existing password and press <Enter>.
3. You will see Confirm Password, type it again, and press <Enter>.
4. Select Set Password again, and at the Enter Password prompt, DO NOT enter anything – just press <Enter>.
5. At the Confirm Password prompt, again, DO NOT type in anything – just press <Enter>.
6. Select Save to CMOS and exit, type <Y>, then <Enter>.

1.2.12 Save & Exit Setup

Phoenix - AwardBIOS CMOS Setup Utility

- Standard CMOS Features
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management
- PnP/PCI Configuration
- PC Health Status
- Frequency Control
- Load Setup Defaults
- Set Password

1.6 BIOS INSTRUCTIONS continued

Esc : Quit F9 : Menu in Bios : Select Item
 F10 : Save & Exit Setup

Save Data to CMOS

Note! Typing "Y" will quit the BIOS Setup Utility and save user setup values to CMOS.
 Typing "N" will return to Bios Setup Utility.

1.2.13 Quit Without Saving

Phoenix – AwardBIOS CMOS Setup Utility

- Standard CMOS Features
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management
- PnP/PCI Configuration
- PC Health Status
- Frequency Control
- Load Setup Defaults
- Set Password

Esc : Quit F9 : Menu in BIOS : Select Item
 F10 : Save & Exit Setup

Abandon all Data

Note! Typing "Y" will quit the BIOS Setup Utility without saving any changes to CMOS.
 Typing "N" will return to the BIOS Setup Utility.

1.7 DUAL BOOT PROCEDURE

The age of the panel will determine whether it has the dual boot option.

Follow these instructions to set up to boot from the second compact flash card.

- Connect a keyboard to the panel.
- Turn power on to the panel.
- Press the “DEL” key on the keyboard until the BIOS settings appear.
- Use the DOWN ARROW key to select “Integrated Peripherals” and press ENTER (Return) on the keyboard
- Select “OnChip Device IDE” and press ENTER on the keyboard
- Use the DOWN ARROW key and select “On-Chip Secondary PCI IDE”
- Use the PAGE DOWN key and change this setting to “DISABLED”
- Use the UP ARROW key and select “On-Chip Primary PCI IDE”
- Use the PAGE DOWN key and change this setting to “ENABLED”
- Press the F10 key on the keyboard and answer YES to save the settings
- The panel should start to Re-boot from the second boot device

2.0 WELLSITE OPERATING SUMMARY

- 2.1.1** Power up panel and verify it is working properly.

- 2.1.2** Press Zero Depth and verify that panel tension reads 0. Verify tension is recorded on acquisition system.

- 2.1.3** Set line size to match cable size installed in head (refer to section 3).

- 2.1.4** Set Tension Alarm value (refer to section 3).

- 2.1.5** Set depth adjust value (refer to section 3).

- 2.1.6** Install cable in measuring head and lay it slack on the ground.

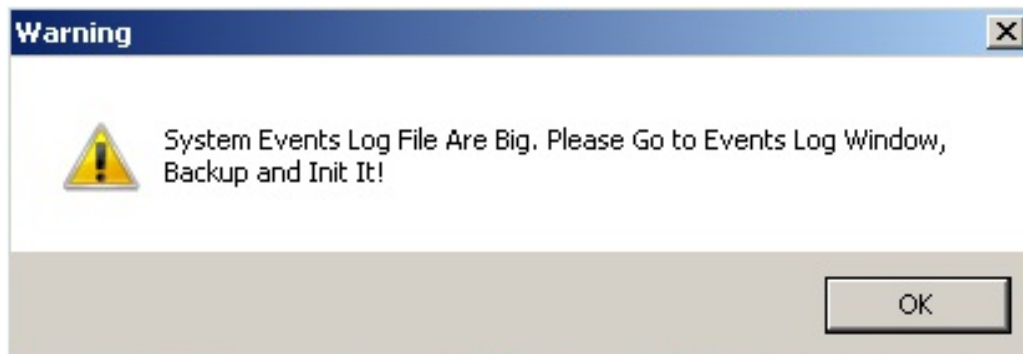
- 2.1.7** Press Menu – Tension Cal – Tension Zero to zero the tension value.

- 2.1.8** Press Menu – Tension Cal – Tension Zero and verify that panel tension reads the proper tension value for the chosen head/load pin. Verify tension is being properly recorded on acquisition system.

- 2.1.9** Pull tool to depth 0 position. Press Zero Depth and verify that panel depth reads 0. Set acquisition system depth to 0 at this time.

Make sure encoder direction is properly set.

2.2 LOG FILE BIG MESSAGE

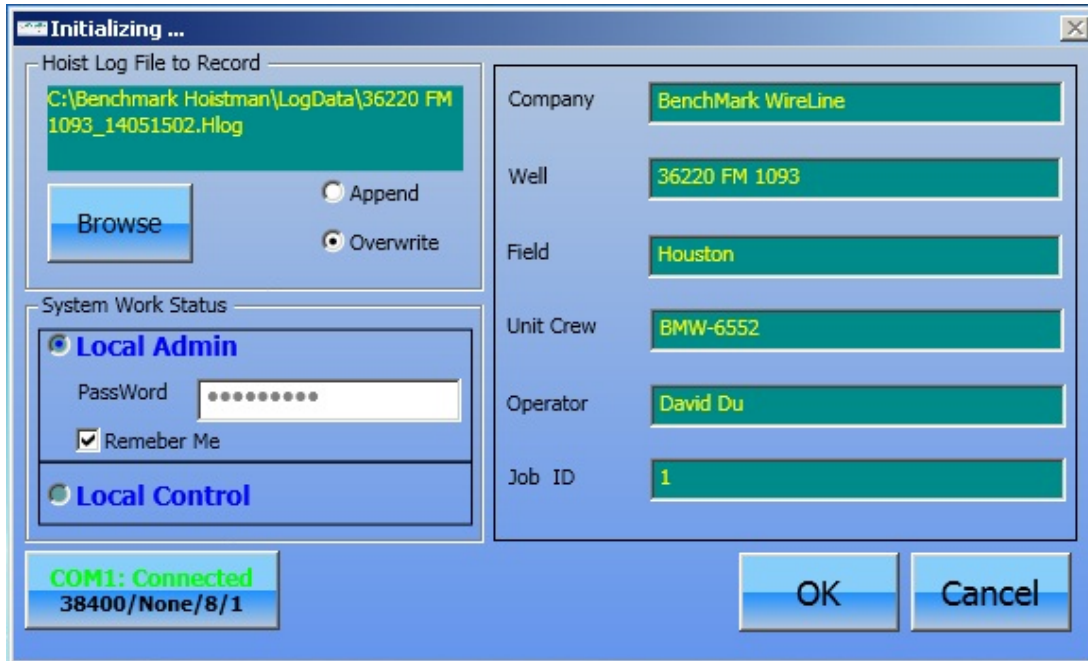


This message may occur if the Events Log File is deemed too large.

This can occur if the program is operating for extended periods of time and the file has not been saved and re-initiated.

It is recommended to save and re-init the Events log file after each job to keep a record of the events of every job and to avoid this message pop-up. Refer to System Setup - Events Log Section 3.9.7.1

2.3 LOG ON SCREEN



Initializing ...

Hoist Log File to Record

C:\Benchmark Hoistman\LogData\36220 FM 1093_14051502.Hlog

Browse

Append
 Overwrite

System Work Status

Local Admin
 Local Control

PassWord:

Remember Me

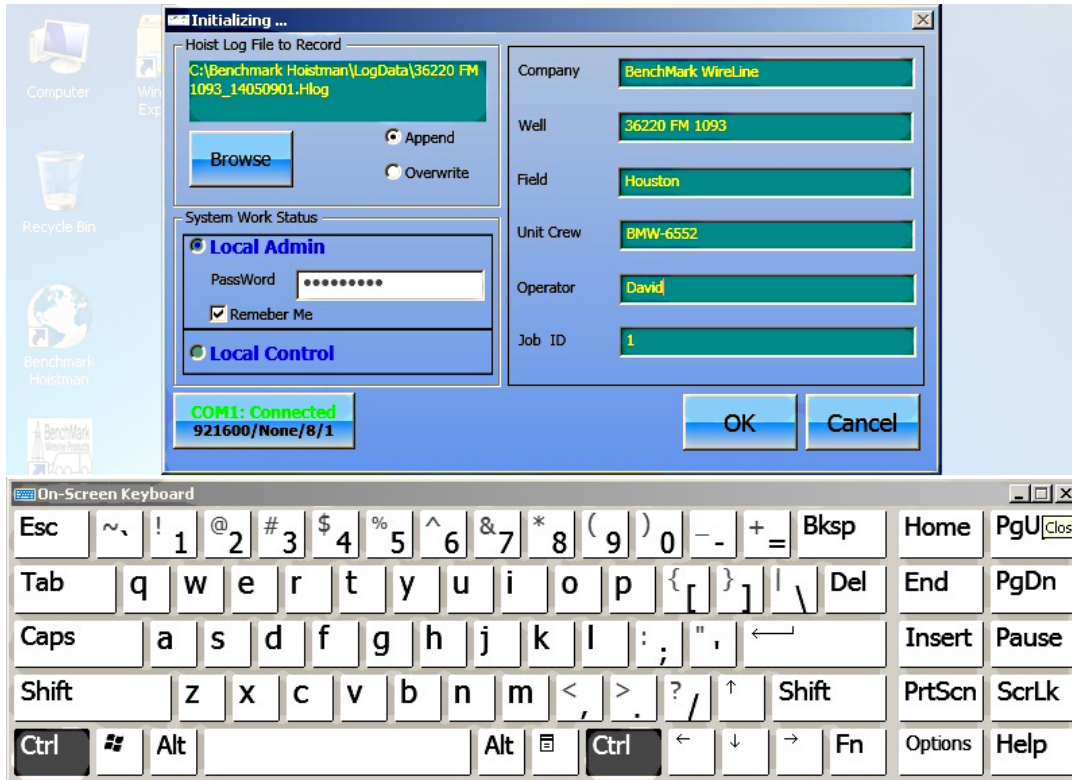
COM1: Connected
38400/None/8/1

Company: BenchMark WireLine
 Well: 36220 FM 1093
 Field: Houston
 Unit Crew: BMW-6552
 Operator: David Du
 Job ID: 1

OK Cancel

Every time that the Hoistman program starts the Operator has the option of appending the new log information to the previous log file, overwriting the previous log file, or creating a new log file.

2.4 LOG ON SCREEN WITH ON SCREEN KEYBOARD

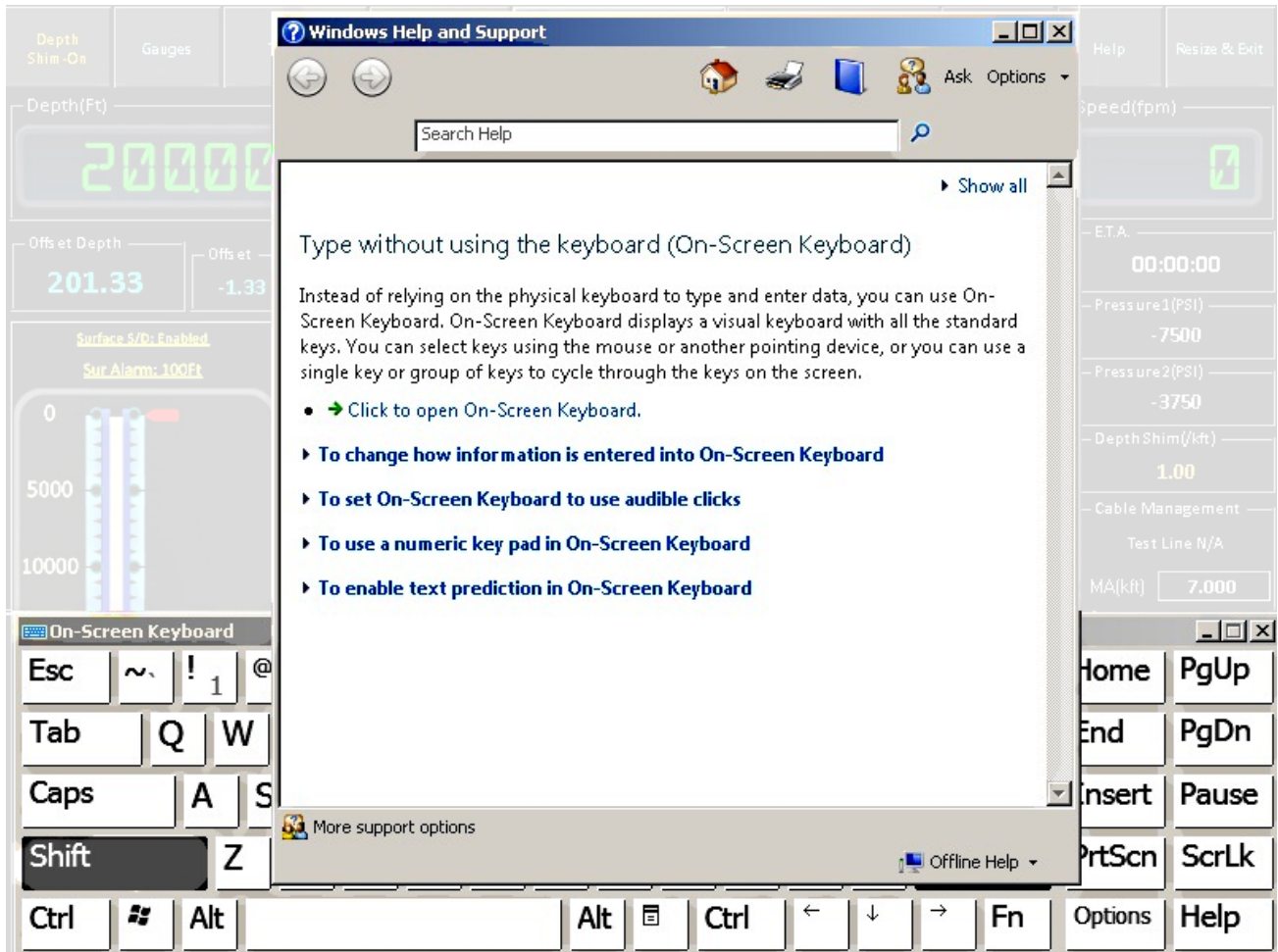


The Operator can Log On to the Hoistman program as Local Admin or Local Control. Logging On as Local Control restricts some the panel parameters that can be changed.

Logging On as Local Admin enables all parameters changes and requires a password.

The panel ships with the Password in 'Remember Me' mode. The password can be changed only by the Local Admin. Refer To Section 3.9.8 for information on changing the password. Notice that the pop-up keyboard always appears whenever the Operator is required to type in a text box.

2.5 ONSCREEN KEYBOARD HELP



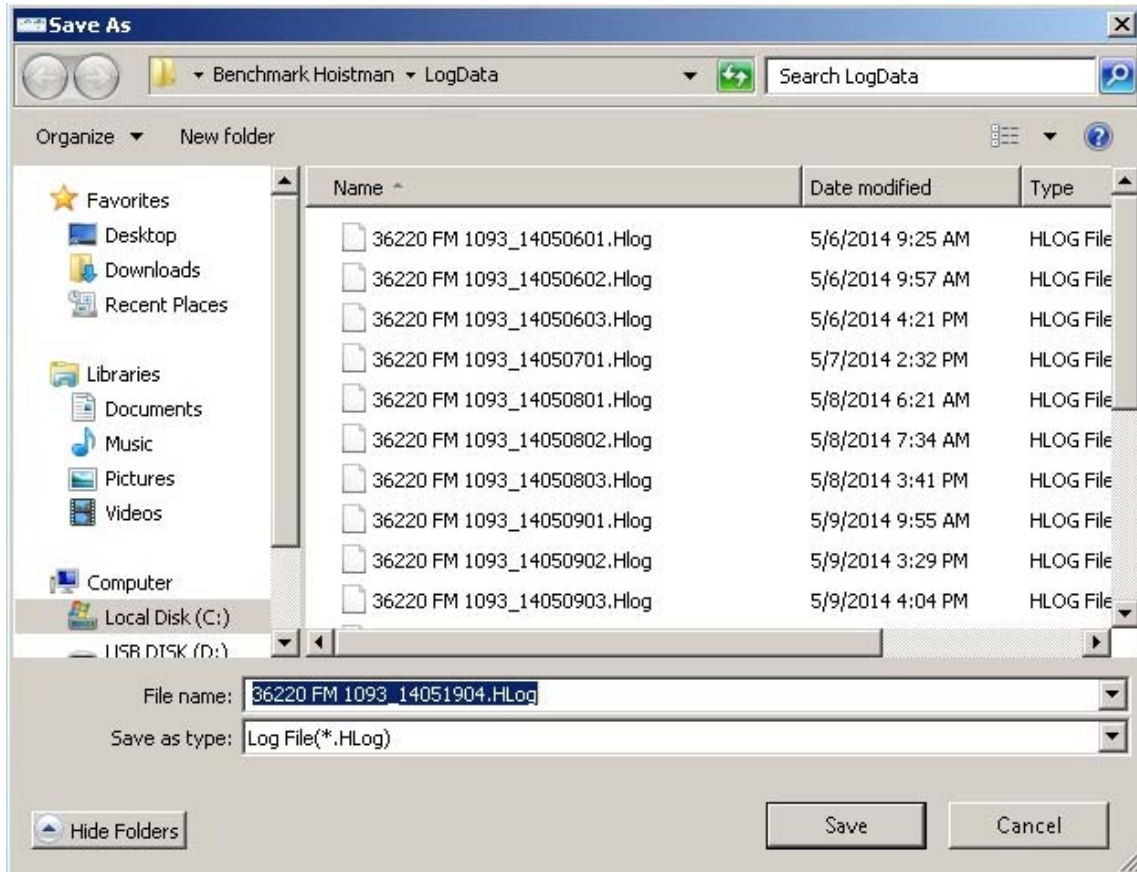
The Help Screen for the on-screen keyboard appears when pressing the “HELP” button located at the lower right.

2.6 ONSCREEN KEYBOARD OPTIONS



The options screen for the on-screen keyboard appears when pressing the “OPTIONS” button. The default settings are shown above.

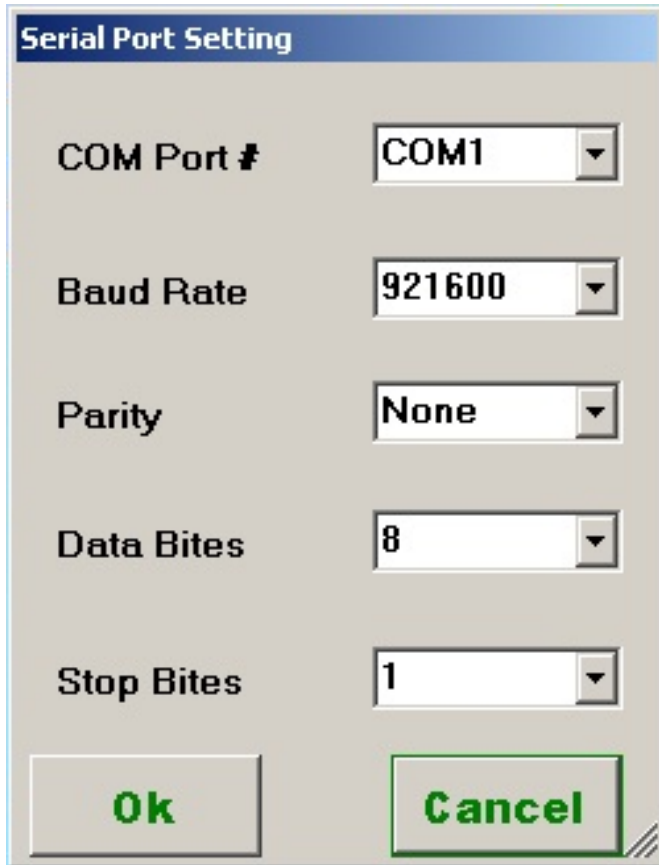
2.7 LOG ON BROWSER



Use the Browse feature to pop-up the file manager.

Note that the default extension for the log file is .Hlog and the default location of the log files is C:\Benchmark Hoistman\LogData\.

2.8 SERIAL PORT SETTINGS



The image shows a dialog box titled "Serial Port Setting" with a blue header bar. It contains five rows of settings, each with a label on the left and a dropdown menu on the right. The settings are: COM Port # (COM1), Baud Rate (921600), Parity (None), Data Bites (8), and Stop Bites (1). At the bottom of the dialog are two buttons: "Ok" and "Cancel", both with green text.

Setting	Value
COM Port #	COM1
Baud Rate	921600
Parity	None
Data Bites	8
Stop Bites	1

It is recommended to use the following Serial Port Settings as shown above.

3.0 SOFTWARE OPERATING INSTRUCTIONS

3.1 MAIN SCREEN OVERVIEW

When the system first boots up, the main screen will appear.



3.1 MAIN SCREEN OVERVIEW continued

After Log In the Main Screen appears. The sub-menu selection buttons are accessed across the top of the screen. Allow approximately five (5) seconds for the panel parameters to be transferred from the Acquisition board to the Hoistman program before invoking the sub-menus.

Depth/Shim - invokes a sub-menu for setting panel depth and shim. Refer to Section 3.3.4

Gauges - invokes a sub-menu for setting the main screen gauge scales. Refer to Section 3.4

Tension - invokes a sub-menu for setting the tension factor and performing tension calibration. Refer to Section 3.5.1

Stretch Corr - allows the enabling or disabling of the tension based stretch correction. refer to Section 3.6.1

Alarms - invokes a sub-menu for setting the alarm and shutdown parameters. Refer to Section 3.7

System Setup - Invokes a sub-menu for setting the majority of panel parameters. Refer to Section 3.8

Log View - Pressing this button will invoke a pop-up screen of the built-in plotting program. Refer to Section 3.9.1

Help - Invokes a sub-menu for viewing the software version, the panel manual, and the panel drive usage and capacity. Refer to Section 3.10.1

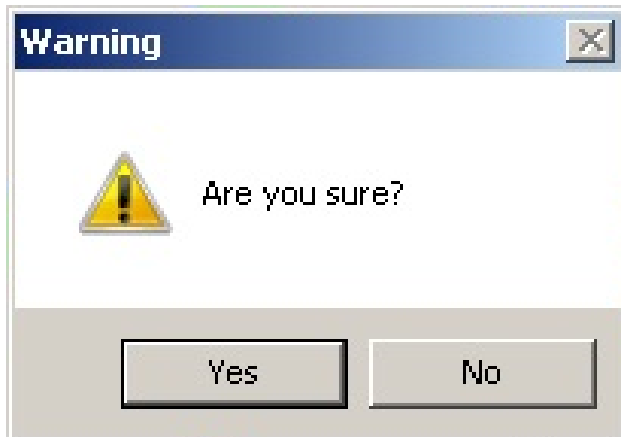
Resize & Exit - Invokes a sub-menu for minimizing or exiting the program or shutting down the Operating System. Refer to Section 3.11.1

Other Main Screen Buttons

Zero Depth - Zeroes the panel depth. Invokes the following pop-up dialog which asks "Are You Sure You Want To Zero Depth?" to avoid accidental zeroing.

3.1 MAIN SCREEN OVERVIEW continued

Zero Depth Acknowledgement Dialog



Alarm Silence - Silences the panel alarm. Refer to Section 3.7.14

Reset Tension - Resets the differential tension (DTen/Incr) gauge needle.

Start Job - Invokes a sub-menu for opening the LAS and REC log files. Refer to Section 3.9.11

Stop Job - Closes the LAS and REC log files. Refer to Section 3.9.13

Events Log – Opens the system events Log File. Refer to Section 3.9.7.1

Shutdown Released/Activated - This button is enabled upon a shutdown condition allowing the operator to press this button to de-activate the panel shutdown relay. Refer to Section 3.7.15

3.2.1 MAIN SCREEN MINIMIZED

Main Screen showing minimal boxes – by double tapping the boxes disappear.



This is the view of the Main Screen when the non-essential text boxes have been made invisible by double-tapping on the individual text Boxes

Note: The essential text boxes and gauges always remain visible on the main screen.

All hidden text boxes can be restored by navigating to the system setup sub-menu and pressing the “Show All” button.

3.2.2 MAIN SCREEN TOUCH POINTS

Call information

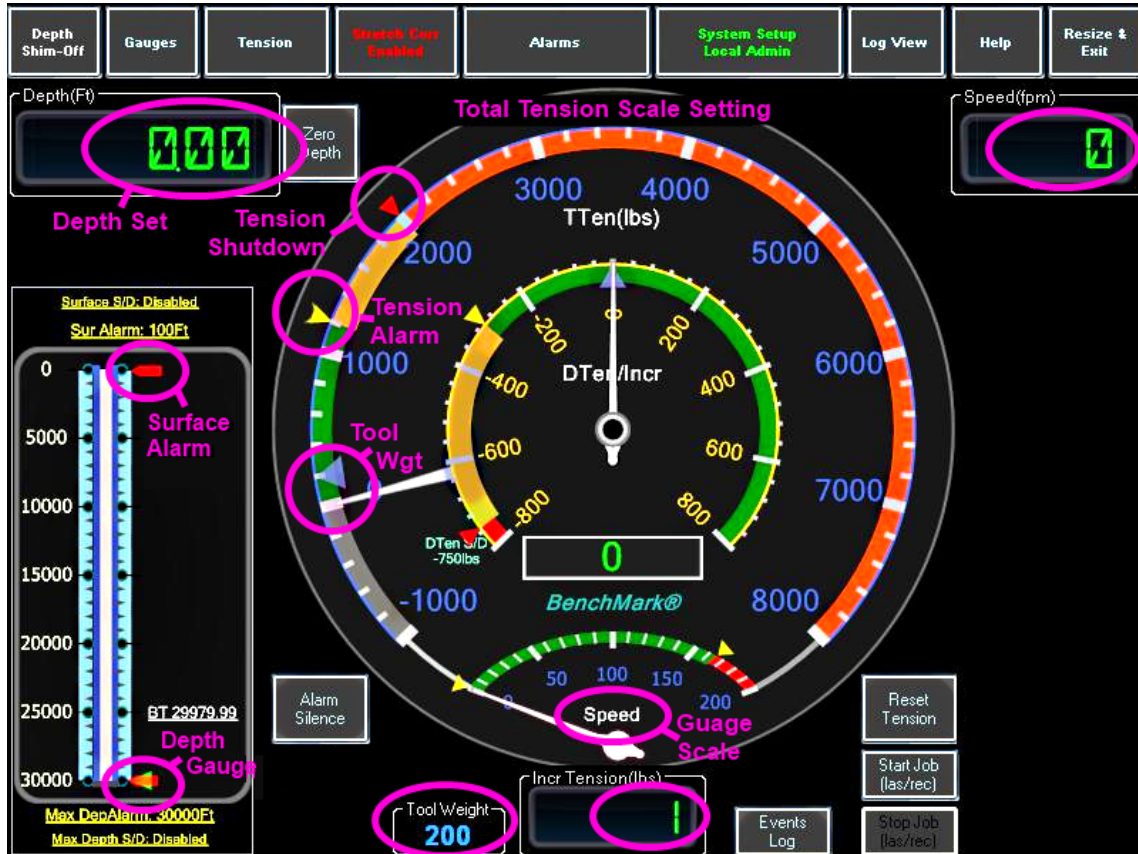
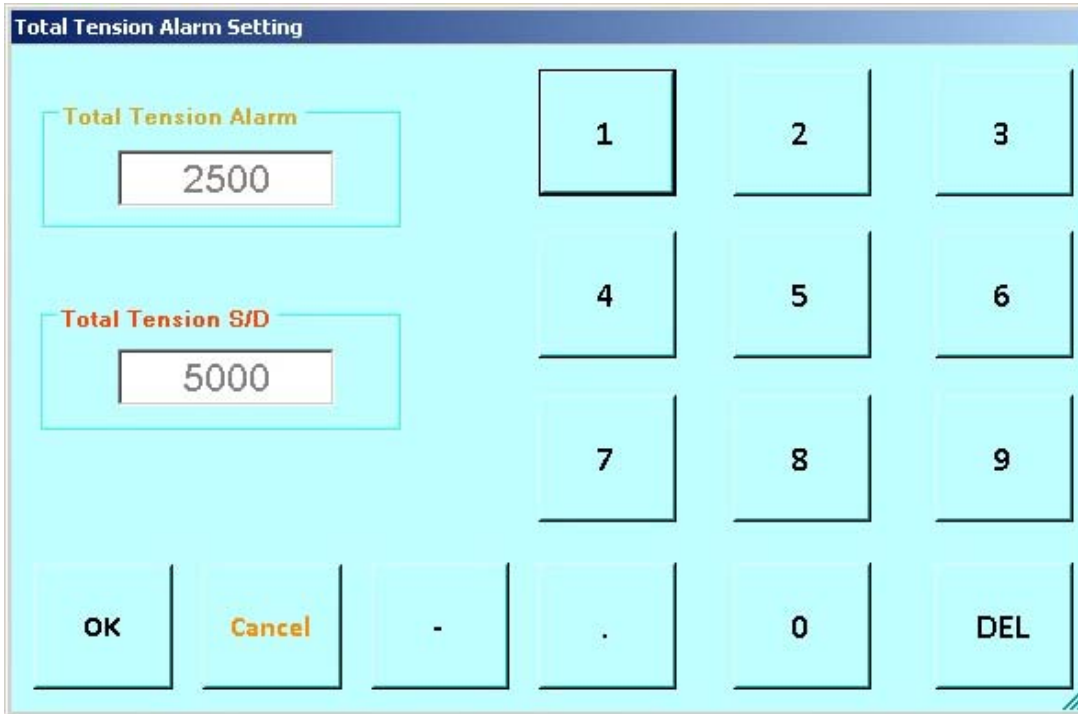


Figure ? shows the various 'touch points' on the main screen that invoke dialog boxes for changing the gauge scales and alarm and shutdown values without having to navigate to the different sub-menus.

Touch Points

- | | |
|-----------------------------|-------------------------------------|
| Surface Alarm | (Refer to 3.7.3 for description) |
| Incremental.jpg | (Refer to 3.8.19.1 for description) |
| Differential.jpg | (Refer to 3.8.19.2 for description) |
| TensionAlarmAndShutdown.jpg | (Refer to 3.3.1 for description) |
| SpeedAlarms | (Refer to 3.3.2 for description) |
| SetDownAlarmAndSDScale.jpg | (Refer to 3.3.3 for description) |
| TensionScale.jpg | (Refer to 3.4.1 for description) |
| SpeedGaugeScale.jpg | (Refer to 3.4.4 for description) |
| DeltaTensionScale.jpg | (Refer to 3.4.3 for description) |
| Depth Gauge.jpg | (Refer to 3.4.2 for description) |

3.3.1 TENSION ALARMS AND SHUTDOWN



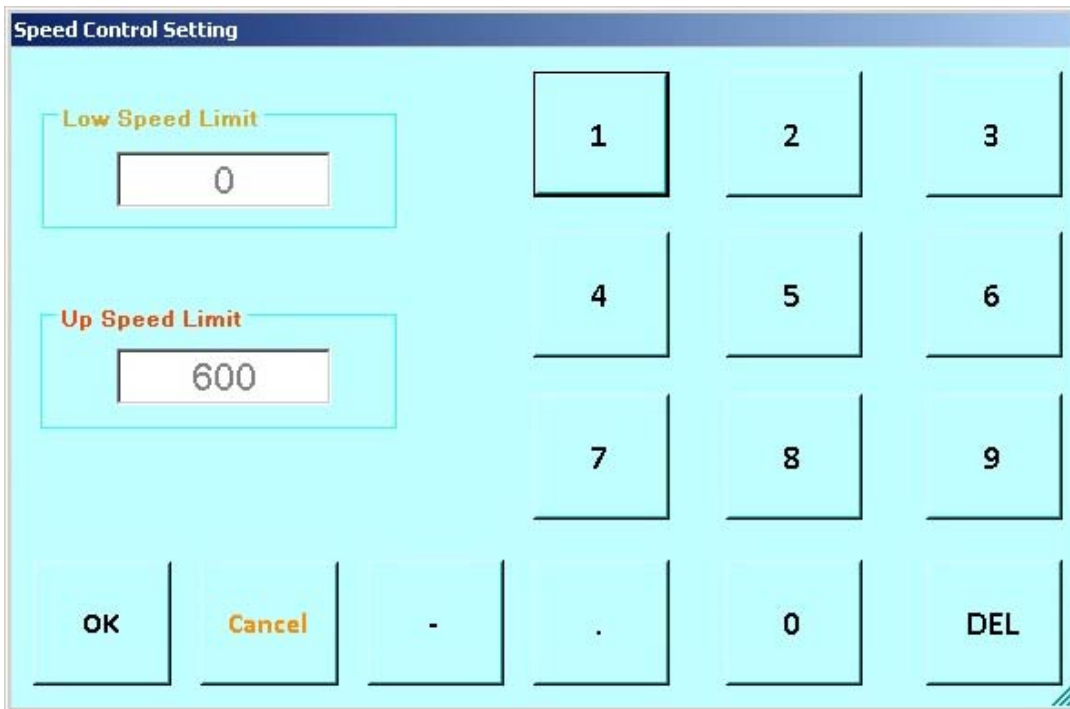
The screenshot shows a touchscreen interface for setting tension parameters. The title bar at the top reads "Total Tension Alarm Setting". There are two main input sections: "Total Tension Alarm" with a value of 2500, and "Total Tension S/D" with a value of 5000. To the right of these inputs is a numeric keypad with buttons for digits 1 through 9, 0, a decimal point, and a minus sign. At the bottom of the keypad are buttons for "OK", "Cancel", and "DEL".

The Total Tension Alarm setting is for the panel's audible alarm only. The panel's audible alarm will turn on when the tension exceeds this value.

Note – This tension alarm value should be set lower than the tension shutdown value.

The Total Tension S/D (shutdown) setting will cause the panel shutdown relay to activate (close) when the tension value exceeds the value set.

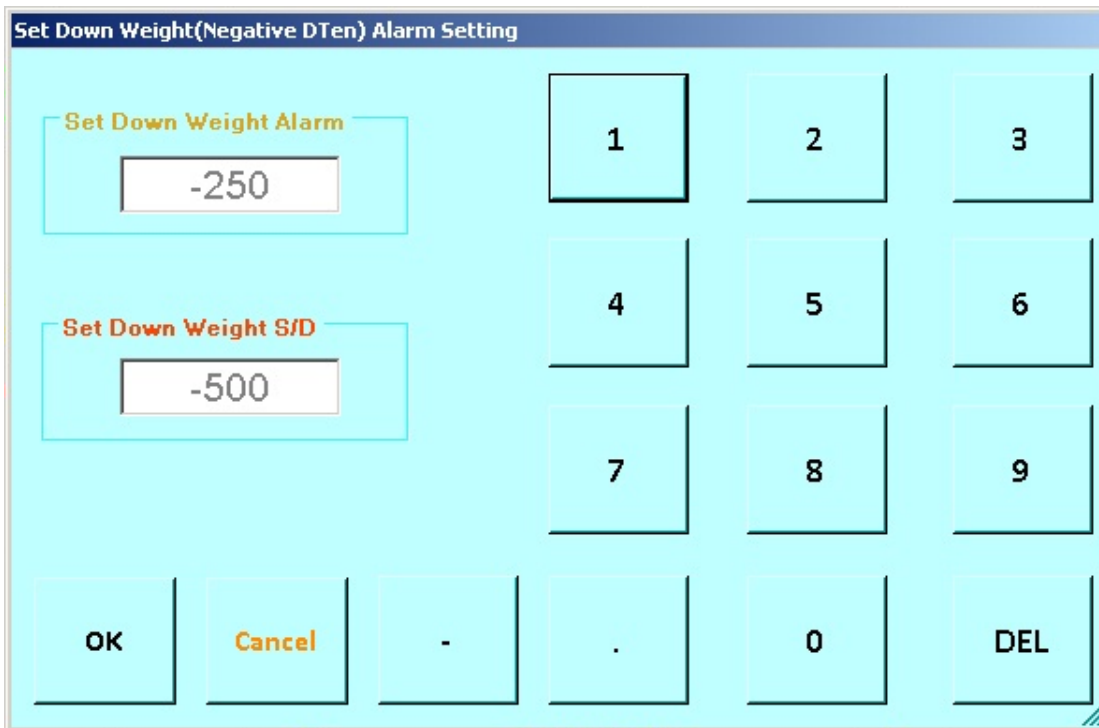
3.3.2 SPEED ALARMS



The image shows a touchscreen interface titled "Speed Control Setting". It features two input fields: "Low Speed Limit" with the value "0" and "Up Speed Limit" with the value "600". To the right of these fields is a numeric keypad with buttons for digits 1-9, a decimal point, and a zero. At the bottom, there are buttons for "OK", "Cancel", "-", ".", "0", and "DEL".

An audible alarm will sound when values are outside the above parameters.

3.3.3 SET DOWN ALARM AND SD SCALE



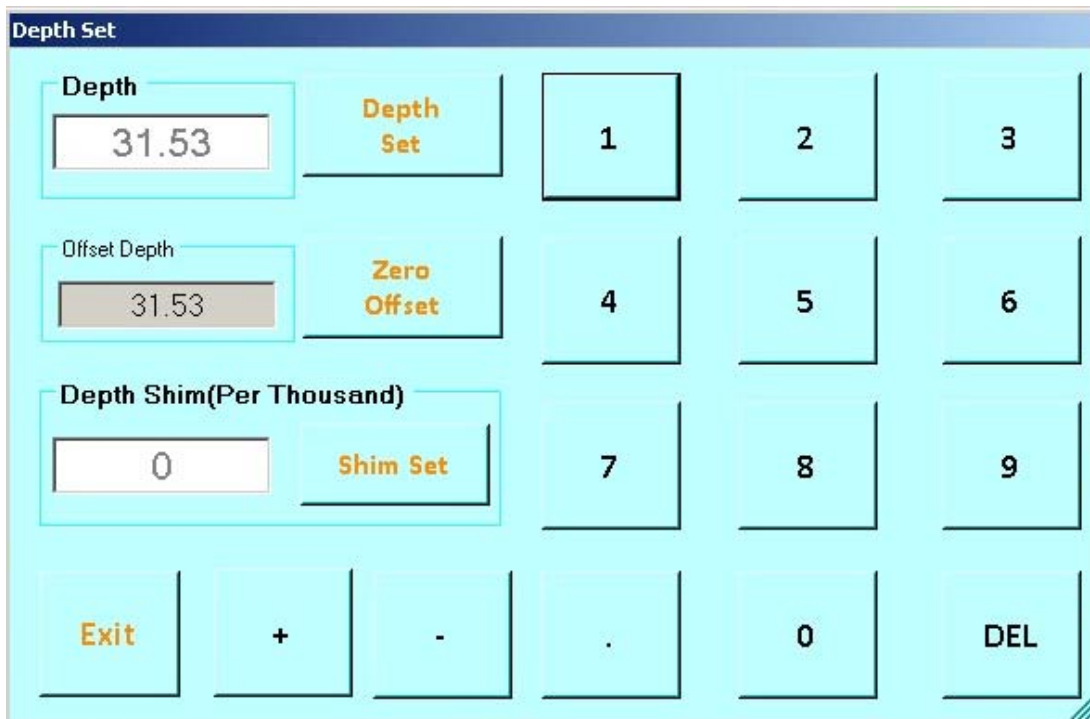
Negative DTEN Alarm is analogous to 'set down weight' and the panel's audible alarm will turn on when the tension decreased rapidly in a negative direction.

The Negative DTEN S/D setting will cause the panel shutdown relay to activate (close).

This function is similar to a differential tension shutdown except that it only activates when the value is exceeded. This will occur when tension decreases rapidly in a negative direction.

When this event occurs the shutdown relay will close.
 Default: 750

3.3.4 DEPTH – SUBMENU



The screenshot shows a touchscreen interface for setting panel depth. It includes three input fields with 'Set' buttons: 'Depth' (31.53), 'Offset Depth' (31.53), and 'Depth Shim (Per Thousand)' (0). A numeric keypad with buttons 1-9, 0, and a decimal point is on the right. At the bottom are function buttons: Exit, +, -, ., 0, and DEL.

DEPTH SET - Allows changing the panel depth

OFFSET DEPTH – Displays the panel depth previous to the operator performing a “Depth Set”.

Depth Shim

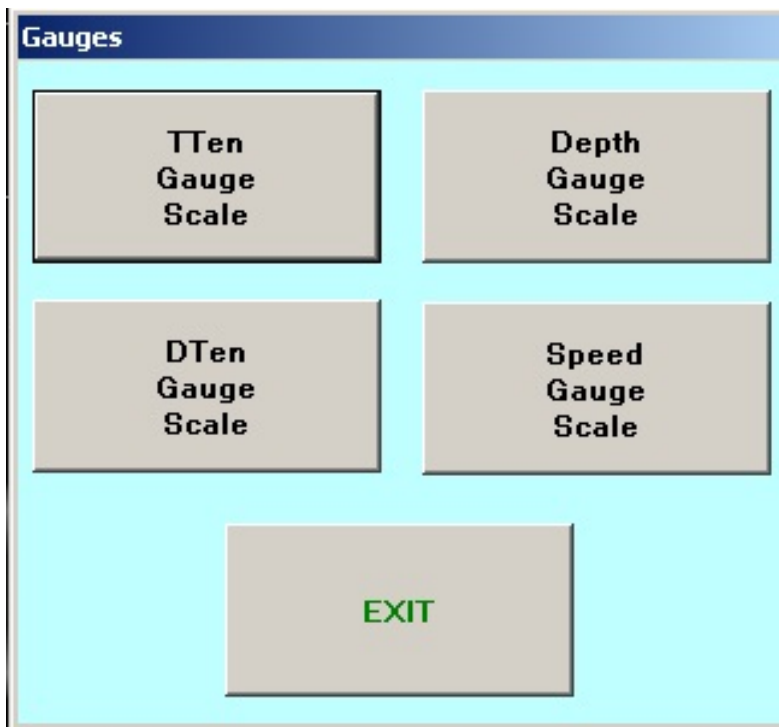
Adds or subtracts depth continually.

If 1 is entered then 1 foot or 1 meter will be added every 1000 feet or 1000 meters.

If -.2 is entered then .2 feet or .2 meters will be subtracted every 1000 feet or 1000 meters.

Default is 0.0

3.4 GAUGES - MENU



TTEN - The Total Tension Scale Screen allows the changing of the outer gauge scale at the center of the screen.

DTEN - Inner Gauge Scale – Incremental/Differential tension provides a high resolution tension scale. It must be periodically reset as tension increases or decreases to keep it from “pegging out” when set to Incremental Mode.

DEPH – Allows the changing of the depth scale located at the lower left of the main screen.

SPEED – Allows the changing of the speed scale located at the lower center of the main screen.

3.4.1 GAUGES – TTEN GAUGE SCALE

Total Tension Scale Setting

Left Scale
0

Right Scale
6000

1 2 3
4 5 6
7 8 9
- . 0 DEL

OK Cancel

Sets the outer total tension gauge scale on the Main Screen.

3.4.2 GAUGES - DEPTH GAUGE

Data Input

Previous Value

10000.00

Enter New Value

Depth Gauge Scale Set

	1	2	3
	4	5	6
	7	8	9
OK	CANCEL	-	.
		0	DEL

Sets the bottom of the well depth gauge scale on the main screen.

3.4.3 GAUGES – DELTA / INCREMENTAL TENSION (DTEN)

Data Input

Previous Value

200.00

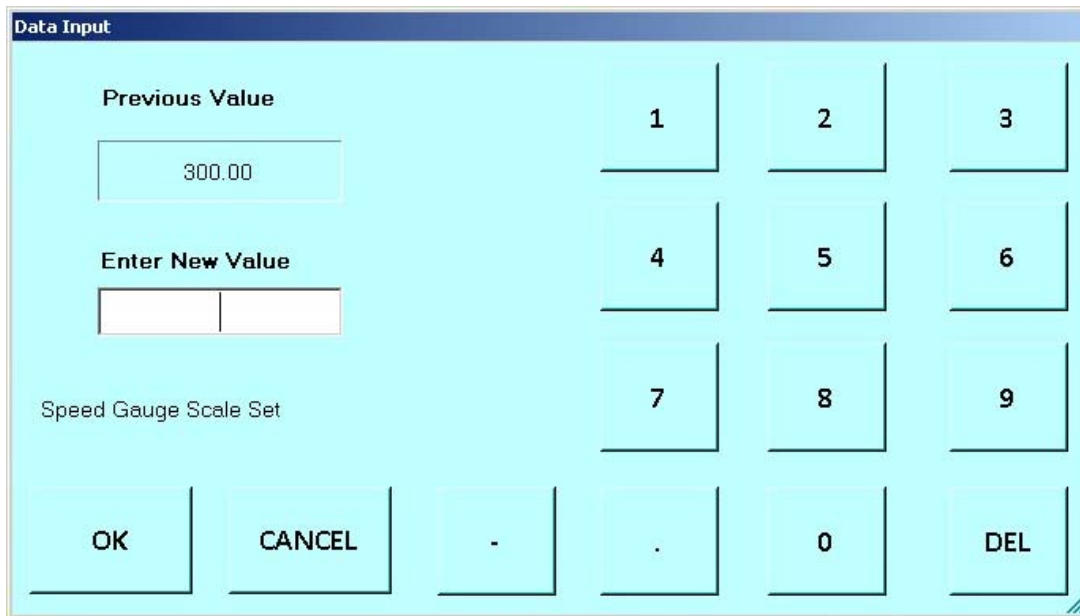
Enter New Value

Delta Tension Gauge Scale Set

1	2	3
4	5	6
7	8	9
OK	CANCEL	-
.	0	DEL

Sets the inner delta / incremental gauge scale on the main screen.

3.4.4 GAUGES - SPEED GAUGE



Data Input

Previous Value
300.00

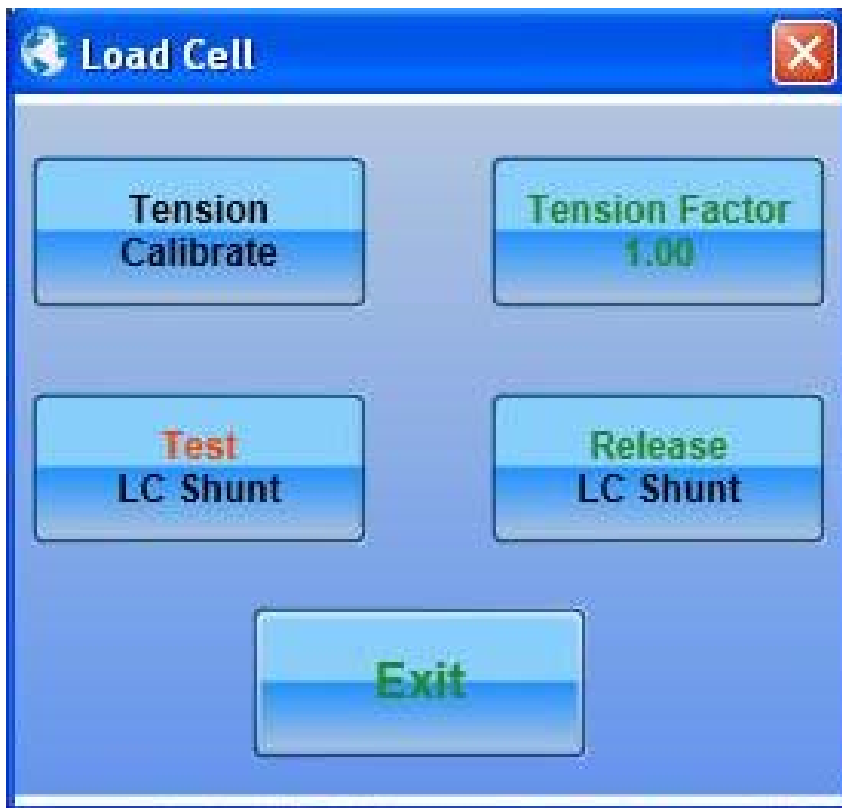
Enter New Value

Speed Gauge Scale Set

1 2 3
4 5 6
7 8 9
OK CANCEL - . 0 DEL

Sets the speed gauge scale on the main screen.

3.5.1 TENSION – SUB MENU



This submenu provides function or calibrating and testing the load on or load cell.

Tension Calibrate – refer to section 3.5.2

Tension Factor – refer to section 3.5.6

Test LC Shunt – refer to section 3.5.7

Release LC Shunt – refer to section 3.5.8

3.5.2 TENSION CALIBRATE

Tension Calibrate

Tension Calibrate Procedure

1. Install line in head
2. Lay line slack on ground
3. Set computer system to read zero
4. Press zero after tension stabilizes

Note: Tension will not be zeroed if greater than 1000 Lbs.

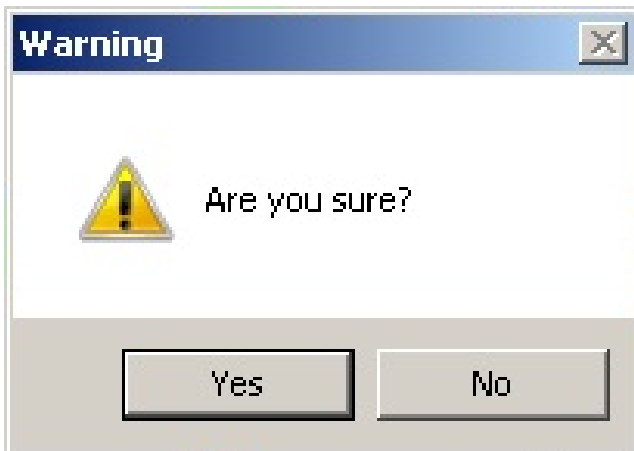
TENSION ZERO	Current Tension -247	TENSION CAL
-------------------------	--------------------------------	------------------------

5. Set computer system to read cal value
6. Press Tension Cal Button

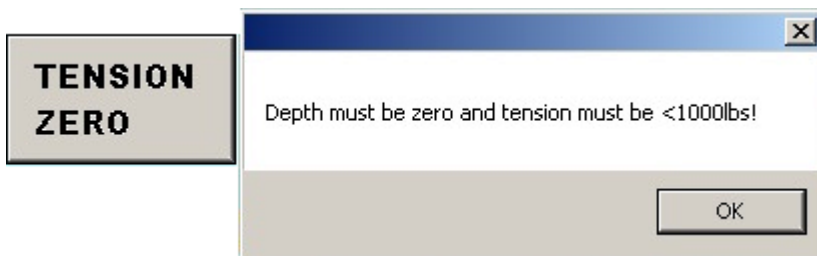
EXIT

Steps 1 - 4 should be done before each run.
Steps 5 - 7 need to be done only at the beginning of each job.

3.5.3 TENSION ZERO



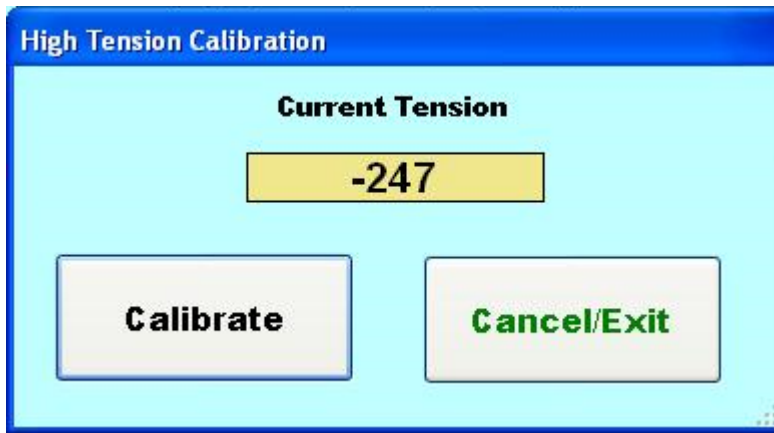
Pressing Tension Zero will null out any tension offset voltage up to 1,000 lbs.



NOTE - Depth value must be zeroed before this menu can be displayed.

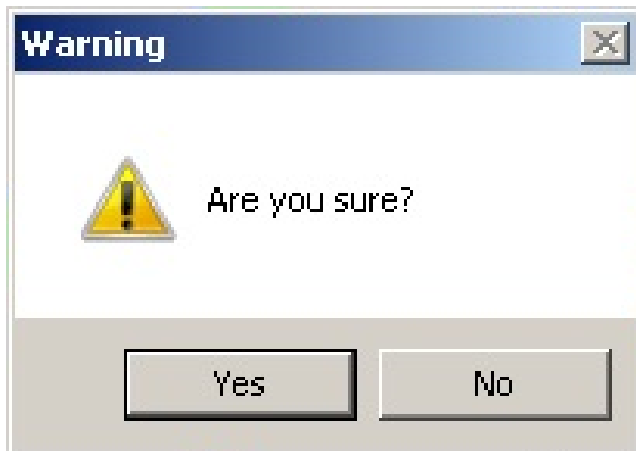
NOTE - Tension value must be less than 1,000 lbs before this menu is displayed.

3.5.4 TENSION CAL – HIGH TENSION



The load pin will automatically shunt when this screen appears. The 'current tension' text box above will display the load pin's shunt tension value.

3.5.5 TENSION CAL



Pressing Tension Cal will activate the tension relay inside the panel. The load pin should then return a calibrated signal that varies depending on the head chosen.

3K HEAD	5,000 LBS
5K HEAD	10,000 LBS
MAKO HEAD	10,000 LBS
SHARK HAD	4,000 LBS
MEGAMOUTH HEAD	5,000 LBS
DOLPHIN HEAD	5,000 LBS
HYD-SL	10,000 LBS
OTHER	5,000 LBS

3.5.6 TENSION FACTOR

Data Input

Previous Value

1.00

Enter New Value

Valid Range: 0.50 <--> 2.00

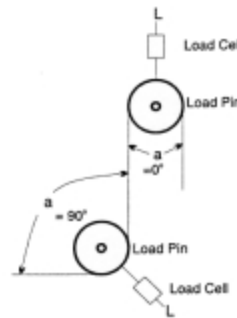
1	2	3
4	5	6
7	8	9
OK	CANCEL	-
.	0	DEL

The Set Tension Factor entry screen will appear. The range is 0.5-2.0 degrees. Default is 1.0.

Explanation: Tension Factor as it relates to Load Cell angle

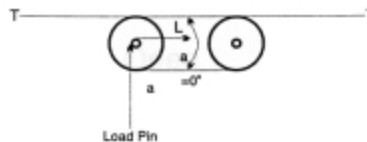
Load cell angle is used to compensate when a load cell is not hung vertically (i.e. bottom sheave). Enter the value derived from the formula:

$$= \frac{1}{\text{Cosine} \left(\frac{\text{Angle}}{2} \right)}$$



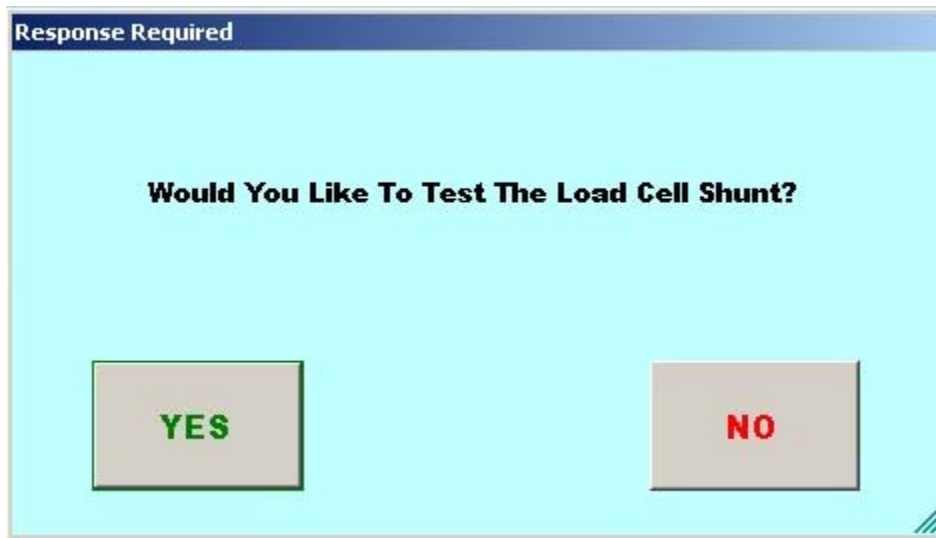
Example 1: Load Cell/Load Pin located at Wireline Lower and Upper Sheave

- Examples:
- 30 degrees = 1.035
 - 45 degrees = 1.082
 - 90 degrees = 1.414
 - 120 degrees = 2.0



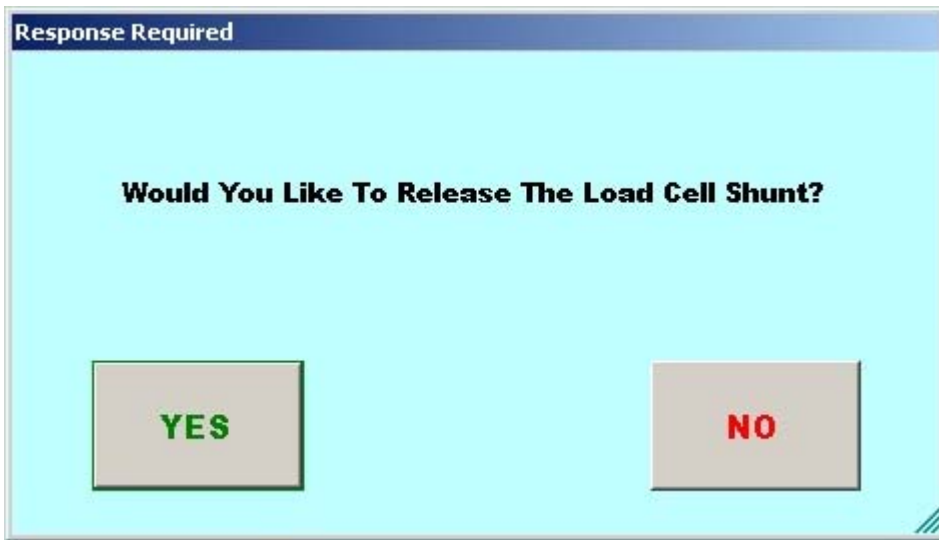
Example 2: Combination two wheel counter at wireline unit

3.5.7 TEST LOAD CELL SHUNT



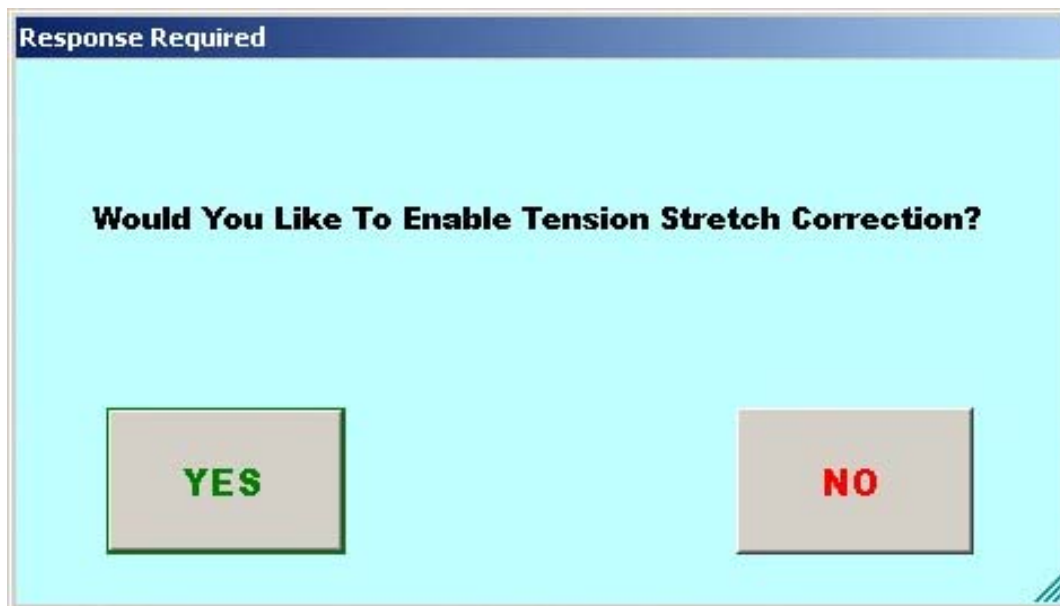
This allows the Operator to test the loadcell circuits and cabling if the loadcell and cable support a shunt resistor. Be aware that this does not test the accuracy of the loadcell.

3.5.8 RELEASE LOAD CELL SHUNT



Allows the Operator to release the loadcell shunt after testing.

3.6.1 STRETCH CORRECTION – ENABLE STRETCH



The Default selection is: Enabled.

Enabling this allows stretch correction to automatically be applied to the depth. The correction is calculated using line size Parameters.

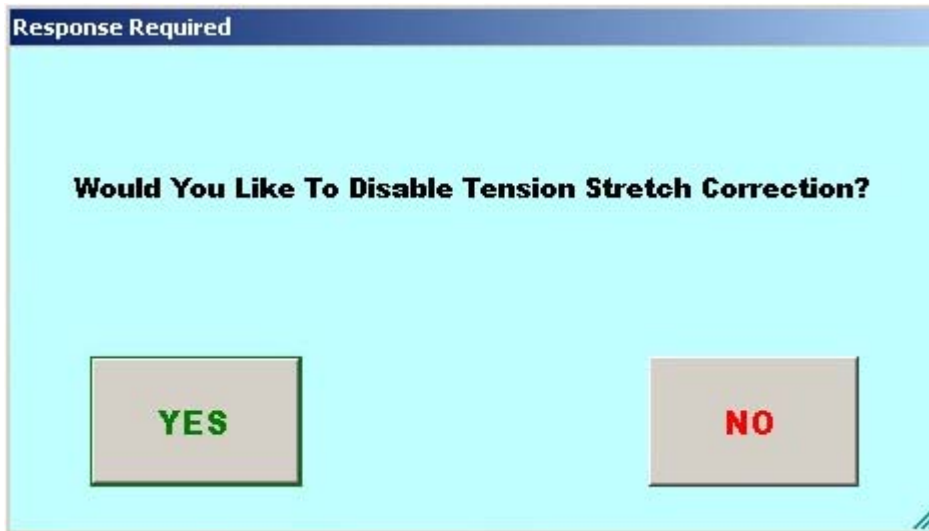
Stretch is calculated by stretch due to cable weight + stretch due to weight at end of cable.

Stretch due to cable weight = stretch coefficient * depth * cable weight / 2.

Stretch due to weight at end of cable = stretch coefficient * depth * (tension – cable weight).

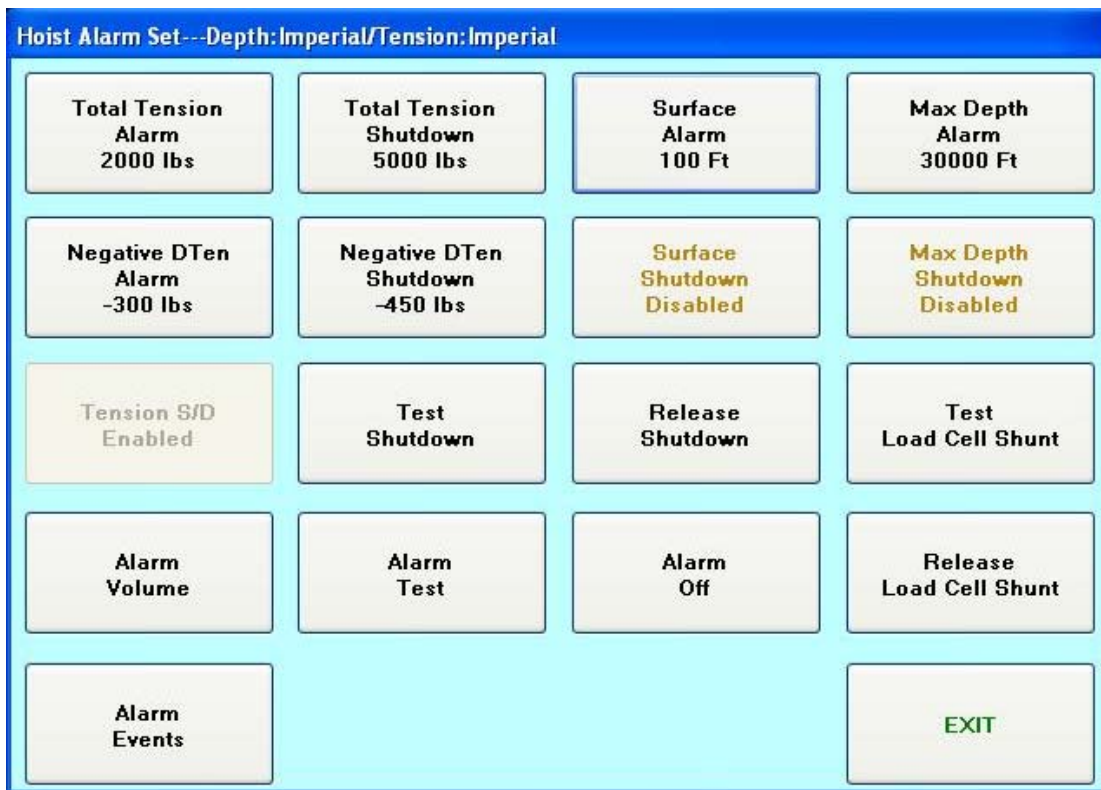
When tension is less than cable weight, tension measured is due to cable weight alone.

3.6.2 STRETCH CORRECTION – DISABLE STRETCH



In Stretch Correction disabled mode the panel depth reflects the encoder depth and the effects of tension impacted on the cable are ignored.

3.7 ALARMS



Tension Shutdown: refer to 3.7.2

Max Depth Alarm: refer to 3.7.4

Surface Alarm: refer to 3.7.3

Surface Shutdown: refer 3.7.7

Set Down Weight Shutdown: refer to 3.7.6

Max Depth Shutdown: refer to 3.7.8

Set Down Weight Alarm: refer to 3.7.5

Alarm Events: refer t 3.7.16

3.7 ALARMS continued

Test Shutdown: refer to 3.7.9

Release Shutdown: refer to 3.7.10

Test Alarm: refer to 3.7.12

Alarm Off: refer to 3.7.13

Alarm Volume: refers to 3.7.11

NOTE - All shutdowns refer to the relay contact closure. It is the operator's responsibility to connect the relay contacts to the actual reel shutdown mechanism.

Future Feature

Disable Tension Shutdown: refer to 3.7.14

Enable Tension Shutdown: refer to 3.7.15

3.7.1 ALARM - TOTAL TENSION ALARM

Data Input

Previous Value

2267.99

Enter New Value

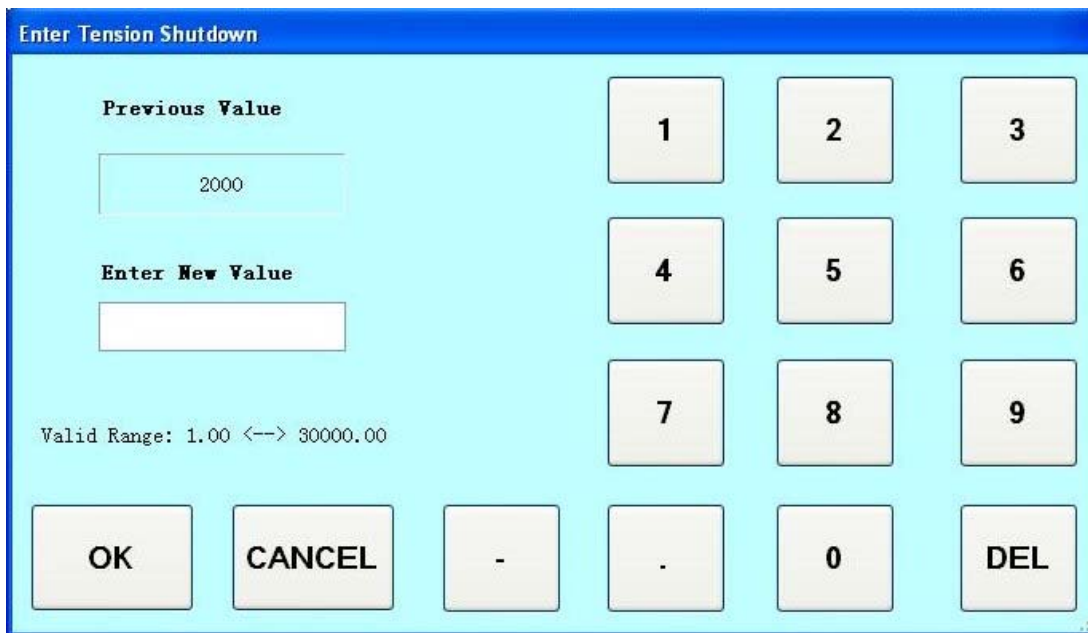
Valid Range: 0.05 <--> 9071.49

1	2	3
4	5	6
7	8	9
OK	CANCEL	-
.	0	DEL

This setting is for the panel's audible alarm only. The panel's audible alarm will turn on when the tension exceeds this value.

Note – This tension alarm value should be set lower than the tension shutdown value.

3.7.2 ALARM - TENSION SHUTDOWN



The Set Tension S/D entry screen will appear. The range is 0.1 to 19999

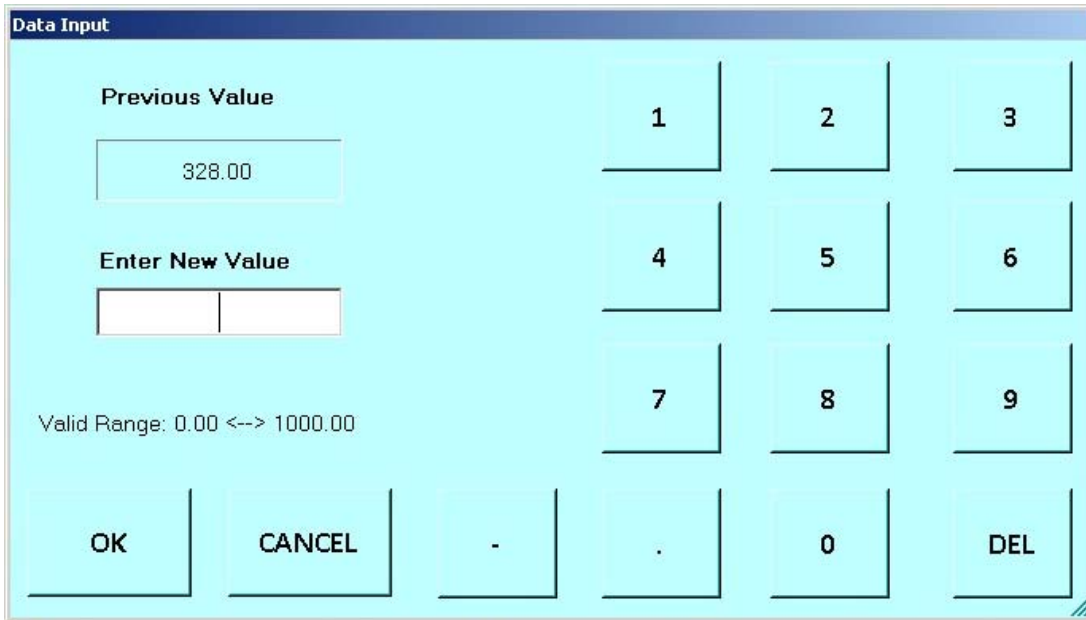
When this value is reached, alarm sounds, tension display flashes value, and tension contact closure switch is closed. This can be used to provide a signal to automatically stop the winch.

Each wireline size will have a corresponding Tension Alarm setting. Only the setting for the cable size selected can be adjusted.

Default is 2000 lbs

NOTE – Tension shutdown is also accessible from the Setup Menu.

3.7.3 ALARM - SURFACE ALARM



Data Input

Previous Value

328.00

Enter New Value

Valid Range: 0.00 <--> 1000.00

1 2 3
 4 5 6
 7 8 9
 OK CANCEL - . 0 DEL

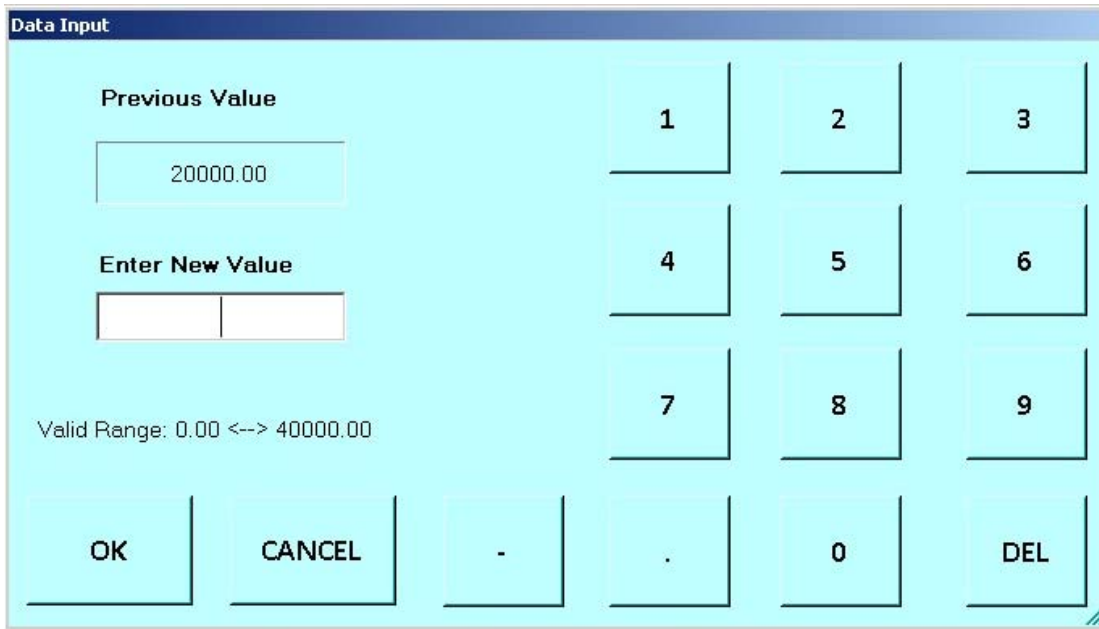
The Set Surface Alarm entry screen will appear. The range is 0-304 Mt or 0 to 999 ft.

When this depth value is reached, the alarm will sound warning the operator that you are approaching the surface.

Default: is 100 feet.

If surface shutdown is enabled, then relay will close.
 Refer to section – 3.7.7

3.7.4 ALARM - MAX DEPTH ALARM



Data Input

Previous Value

20000.00

Enter New Value

Valid Range: 0.00 <--> 40000.00

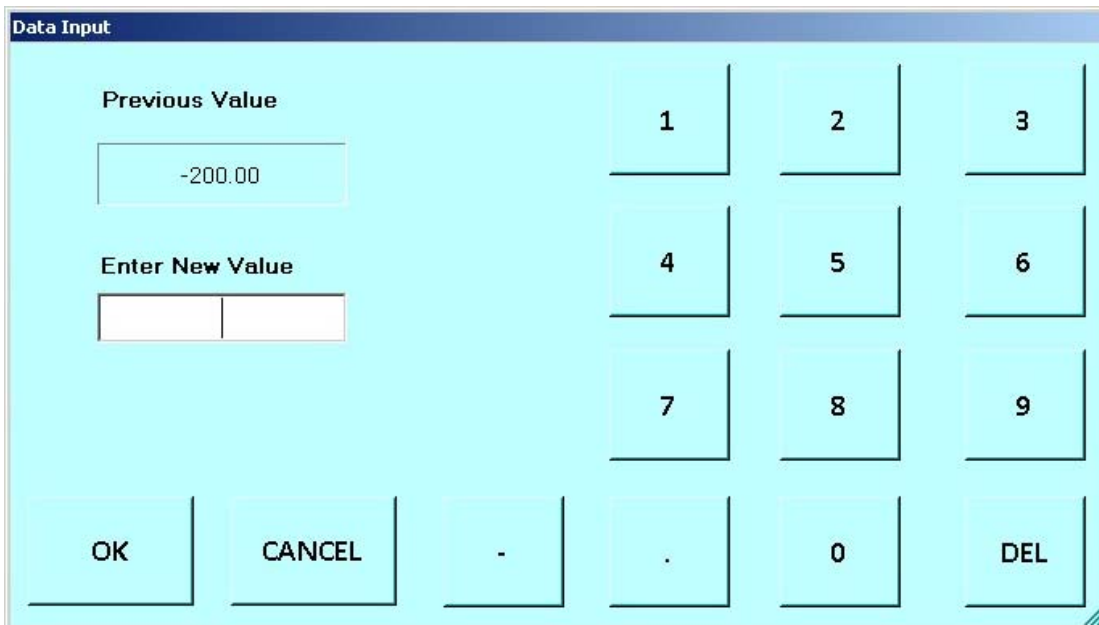
OK CANCEL - . 0 DEL

The Set Max Depth Alarm entry screen will appear. The range is from the surface alarm setting to 30,000 feet.

Allows you to enter in the maximum depth desired. If the tool goes below that depth then an alarm will sound. If max depth shutdown is enabled, then the relay will close (refer to section 3.7.8).

Default: 30,000 ft.

3.7.5 ALARM - SET DOWN WEIGHT (Negative DTEN Alarm)



Data Input

Previous Value

-200.00

Enter New Value

1 2 3

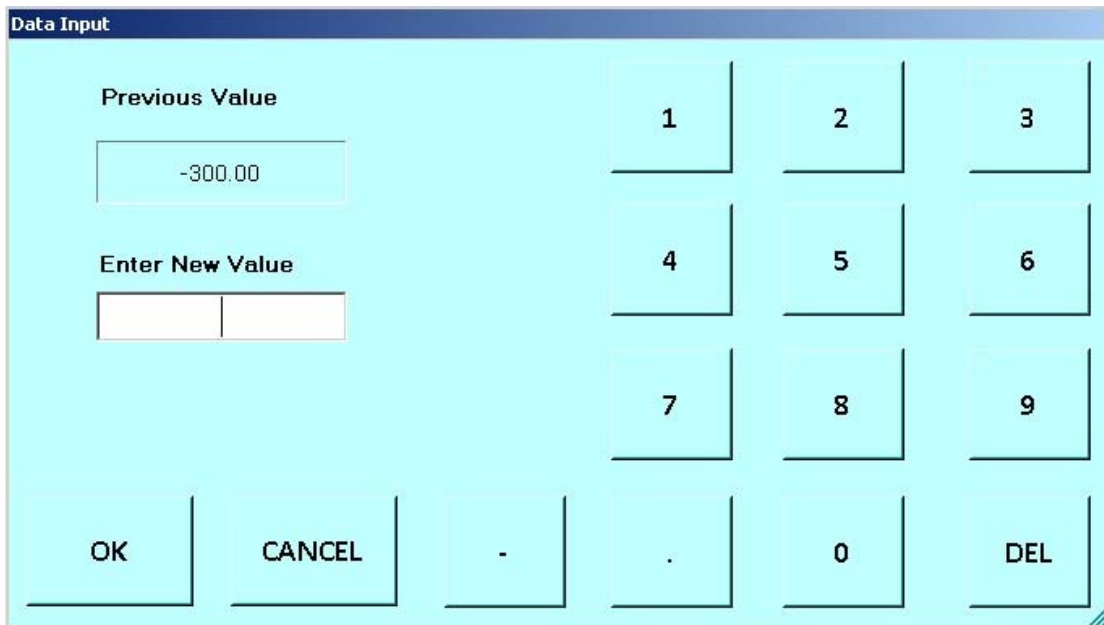
4 5 6

7 8 9

OK CANCEL - . 0 DEL

Negative DTEN Alarm is analogous to 'set down weight' and the panel's audible alarm will turn on when the tension decreased rapidly in a negative direction.

3.7.6 ALARM - DELTA TENSION SHUTDOWN (Negative DTEN Shutdown)



The screenshot shows a 'Data Input' window with a light blue background. On the left, there is a 'Previous Value' field containing '-300.00' and an 'Enter New Value' field which is currently empty. To the right of these fields is a numeric keypad with buttons for digits 1 through 9, a decimal point (.), a minus sign (-), and a 'DEL' button. At the bottom of the keypad are 'OK' and 'CANCEL' buttons. The entire interface is enclosed in a dark blue header bar with the text 'Data Input'.

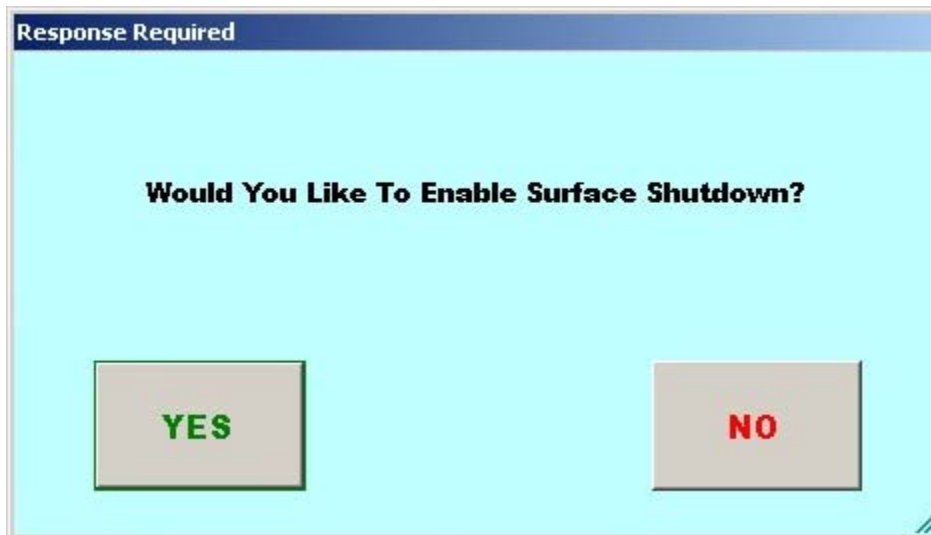
The Negative DTEN S/D entry screen will appear. The range is 0.1 to 5000

This function is similar to a differential tension shutdown except that it only activates when the value is exceeded. This will occur when tension decreases rapidly in a negative direction.

When this event occurs the shutdown relay will close.

Default: 750

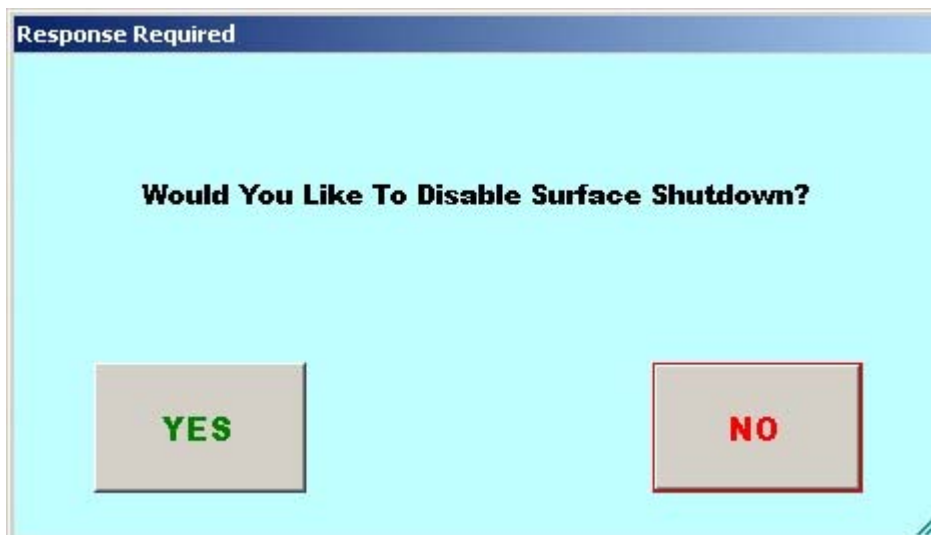
3.7.7 ALARM - SURFACE SHUTDOWN



When pressing this button and the surface shutdown is disabled, the 'Enable Surface Shutdown' message is shown in the dialog screen. Refer to Surface Shutdown Alarm 3.7.3.

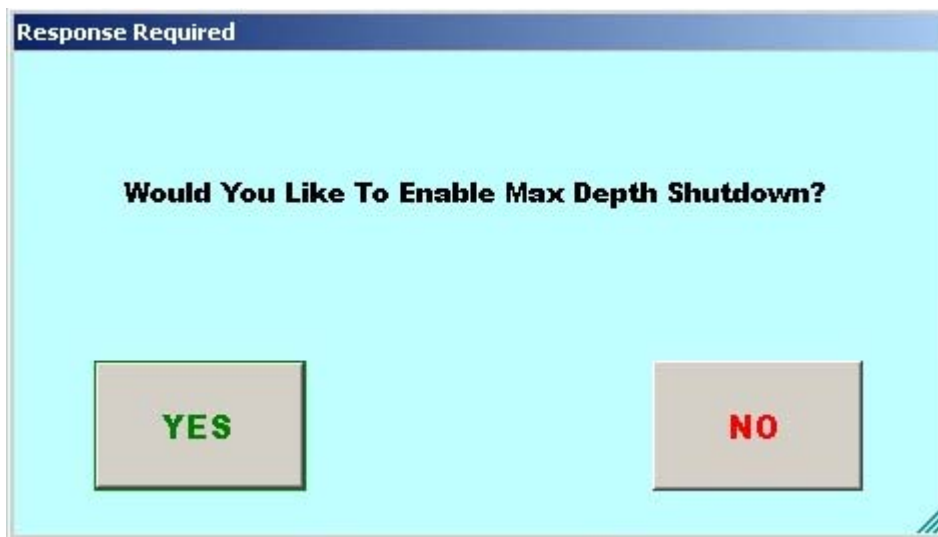
If enabled, the relay will close and the winch will stop when the surface alarm depth value is reached.

Default: Disabled



When the surface shutdown is enabled, the 'disable surface shutdown?' message is shown in the dialog screen.

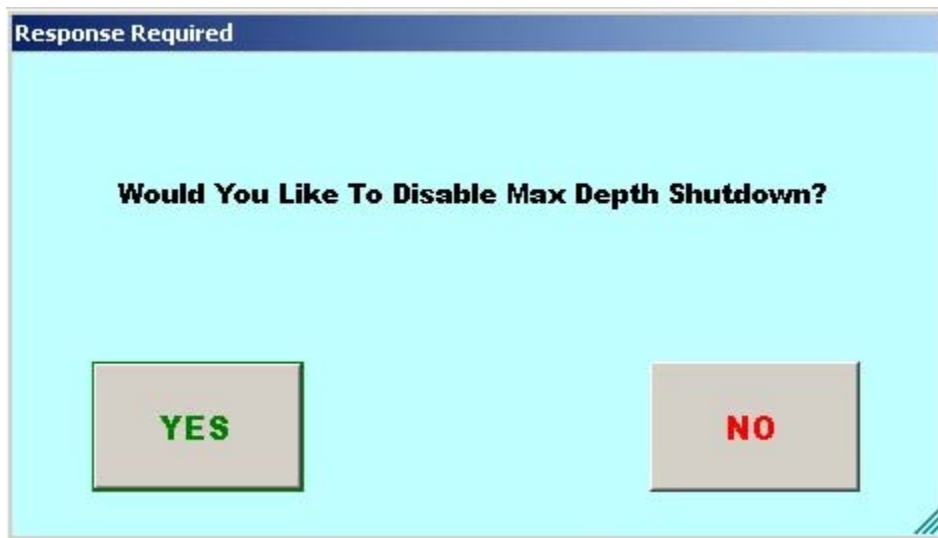
3.7.8 ALARM - MAX DEPTH SHUTDOWN



When pressing this button and the max depth shutdown is disabled, the 'enable max depth shutdown is disabled, the 'enable max depth shutdown?' message is shown in the dialog screen.

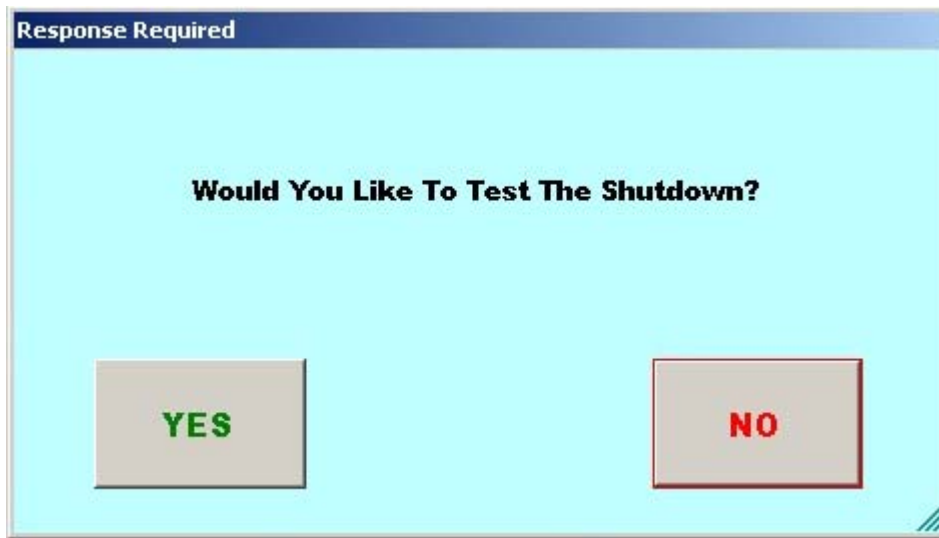
If enabled, the relay will close and the winch will stop when the maximum depth value is reached. The maximum depth value is set on the max depth alarm screen (refer to section 3.7.8).

Default: disabled



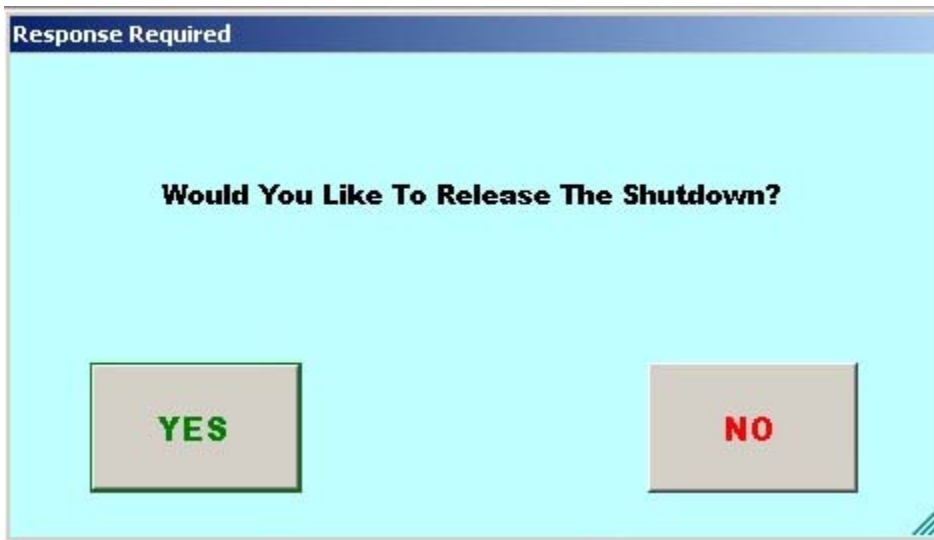
When the max depth shutdown is enabled, the 'disable max depth shutdown?' message is shown in the dialog screen.

3.7.9 ALARM - TEST SHUTDOWN



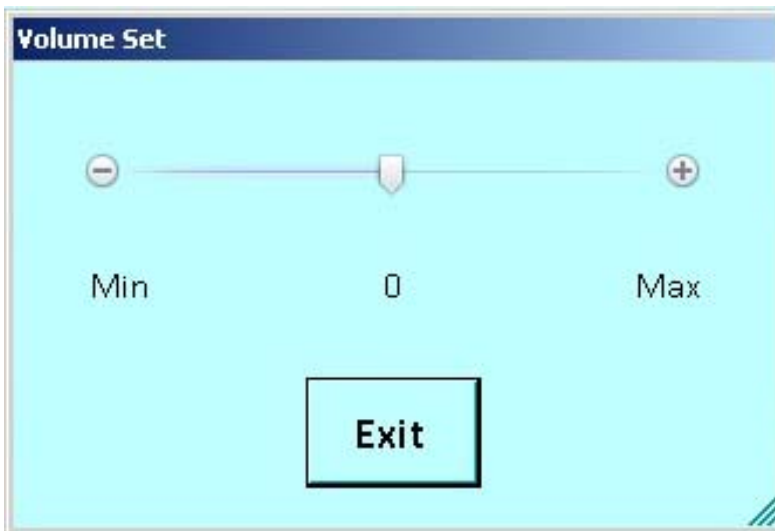
When this button is pressed, the contact closure pins are shorted. This can be used to test the winch shutdown mechanism or any other mechanism that uses these contacts.

3.7.10 ALARM - RELEASE SHUTDOWN



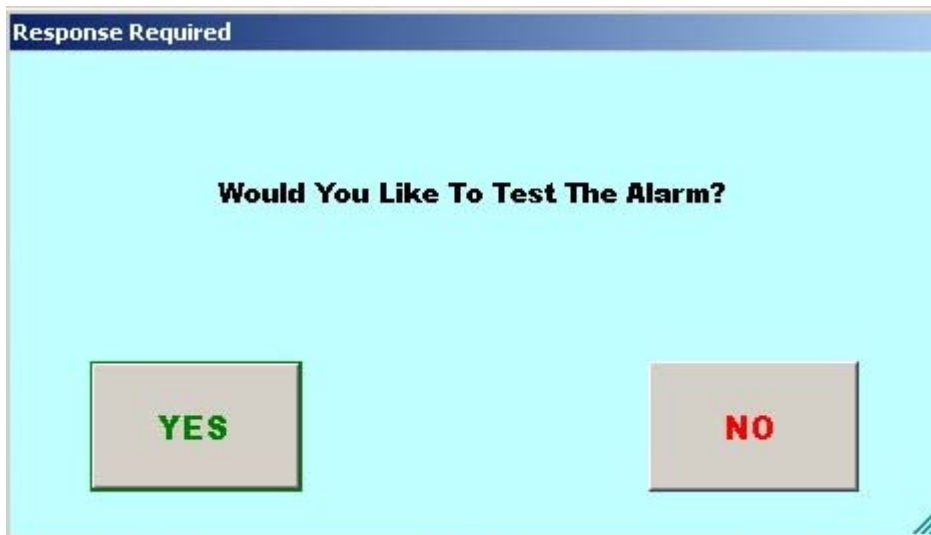
When this button is pressed, the contact closure pins (A and B) on J8 are open.

3.7.11 ALARM VOLUME



For safety reasons the audible alarm is always set to maximum volume when the panel is power-cycled, regardless of the setting prior to the power-cycle.

3.7.12 ALARM - TEST ALARM

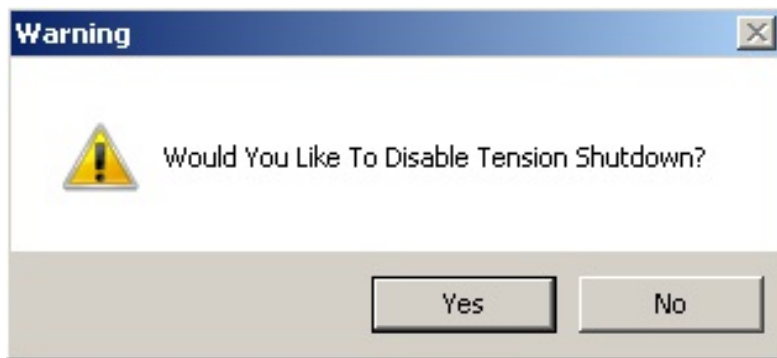


The panel has an internal audible alarm which can be tested through the dialogue screen. To adjust the volume level refer to 3.1.8.10

3.7.13 ALARM OFF

NOTE – There is no dialog screen associated with this function. Refer to the Main Screen 3.1.

3.7.14 ALARM - DISABLE TENSION SHUTDOWN

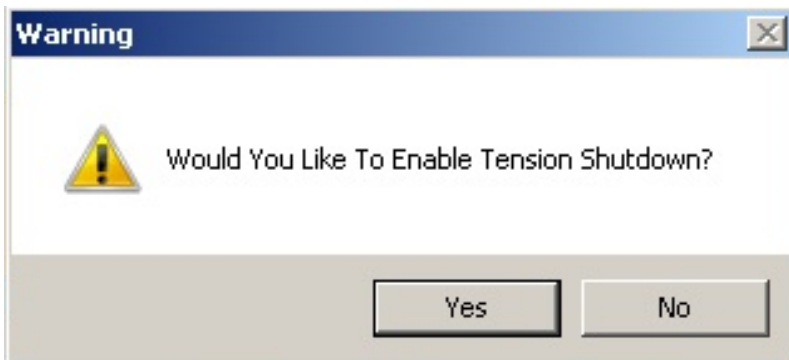


Under some circumstances the Operator may deem it necessary to disable the tension shutdown. The shutdown relay contacts will not close if disabled.

WARNING: Disabling Tension Shutdown is potentially dangerous. Use with care.

Note – this feature is not currently available.

3.7.15 ALARM - ENABLE TENSION SHUTDOWN



This setting is the default. The panel relay contacts will close if a shutdown condition exists. It is the responsibility of the customer to connect the panel relay contacts to the system shutdown mechanism.

3.7.16 ALARM EVENTS



The Alarm Events sub-menu allows the operator to design a more sophisticated set of alarm conditions.

The 'Surface Alarm/Bottom Catch/Spooling Down/Spooling Up' operation controls actually are all speed controls, so the value typed in the column 'Speed/Tension' are speed range. For the 'Tension Control', it's tension range.

The tension alarm of operation control doesn't affect the regular tension alarms (for example tension shut down and tension alarm), its information is displayed on the 'Alarm' buttons of the main screen and setup menu.

This information is shown, for example, when the depth goes inside depth range (6000 to 7000), the operation control information is displayed on the 'Alarm' button of the main screen and on the 'Alarm Events' button of the setup menu screen.

3.7.16 ALARM EVENTS continued

If there is a '+' at the end of the text of the two buttons, that means there is more than one operation control in this depth range. In this example while the direction goes down and the depth goes inside the depth range 6000 to 7000, there are three operation controls: row 3/TTen Control, row 4/DTen Control and row 7/Down In CaseHole.

Also if inside the operation control's depth range and the system tension changes outside of the tension range, the system will give an audible alarm.

When the depth goes inside a speed control's depth range, the system will change the speed ribbon of the speed gauge on the main screen according to the speed setting value. For example, when the depth goes inside 16305.8 to 16240.2, the speed ribbon is set to 131.2 to 164.0 automatically.

BEEP OPERATION CHECK BOX:


When the depth goes inside one operation control's depth operating range, the check box is used for setting if the system gives an audible alarm or just display the operation information on the main screen 'alarm' button.

At the left split window of the 'Operation Control Window', you could check the 'Surface Alarm/Bottom Catch/Spooling Down/Spooling Up' or click the 'Speed Control/Tension Control' to insert one operation control to the right split window. Uncheck the check box to remove the operation control from the right split window.

Also you could select one operation control and click the button 'Delete Select Control' to delete one operation control.

Inside the operation control edit table, a cell can be edited by double-clicking on it. If there is no response that means it has a default value that the operator cannot edit. For example 'Well Structure' in the depth column of 'Bottom Catch/Spooling Down/Spooling Up', the system will generate the depth range according to the well bottom depth.

3.8 SYS SETUP MENU

System Setup Menu---Depth:Metric/Tension:Metric				
Head Type 16" MegaMonth	Wheel Size 1.209 Mt	HYD_SL Head 1.25Mt. / 20.00	Tension Factor 1.00	Eng/Met Units
Line Size 1/4"	Cable Mgt BMW 9-6553 ELine	Encoder Dir Normal	Encoder Status Encoder 1	Pulses Out On Set Depth Enabled
Encoder In 1200 Pulses/Rev	Encoder Out 600 Pulses/Ft.	Pressure1 Enabled	Pressure2 Enabled	Restore Defaults
Summary	Well 36220 FM 1093 Case Hole	Log/Rec File Setup: Updates Every 1000ms	Start Time LogPlot	Start Depth LogPlot
Delta Tension Diff/Incr	Serial Port Status	COM1 38400/None/8/1	Start Log View	Start Data Analysis
Logger Window	Work Status Local Admin	Show All	Start Job	End Job
New Password	Soft Simulator	2K Board		EXIT

Following are the functional descriptions of each of the buttons:

3.8.1 SYS SETUP - HEAD TYPE



BenchMark Measure Head Type

AM5K **16" Shark**

16" Megamouth/Dolphin

20" Mako/Orca/Thresher

HYD_SL **Other**

EXIT

If the "Other" head is chosen, the operator has the option of choosing a variety of wheel sizes listed in 3.8.2

If the "HYD_SL" head is chosen, the operator has the option of choosing from two different wheel sizes listed in 3.8.3.1

For all other head selections, the wheel sizes are automatically determined and cannot be changed. The load pin types are also automatically determined by the head selection.

Note – it is recommended to check the Line Size AFTER changing Head Types.

3.8.2 SYS SETUP - WHEEL SIZE (OTHER)

Data Input

Previous Value

4.00

Enter New Value

[Empty Input Field]

Valid For Head Type: Other
Valid Range: 0.30 <--> 10.00

1	2	3
4	5	6
7	8	9
OK	CANCEL	-
.	0	DEL

This setting allows you to change the size of the depth measuring wheel that is used to measure depth. To use a different measuring head from the Benchmark head, this setting will need to be changed to match the wheel size of the new head.

3.8.3.1 HYD_SL HEAD PARAMATERS



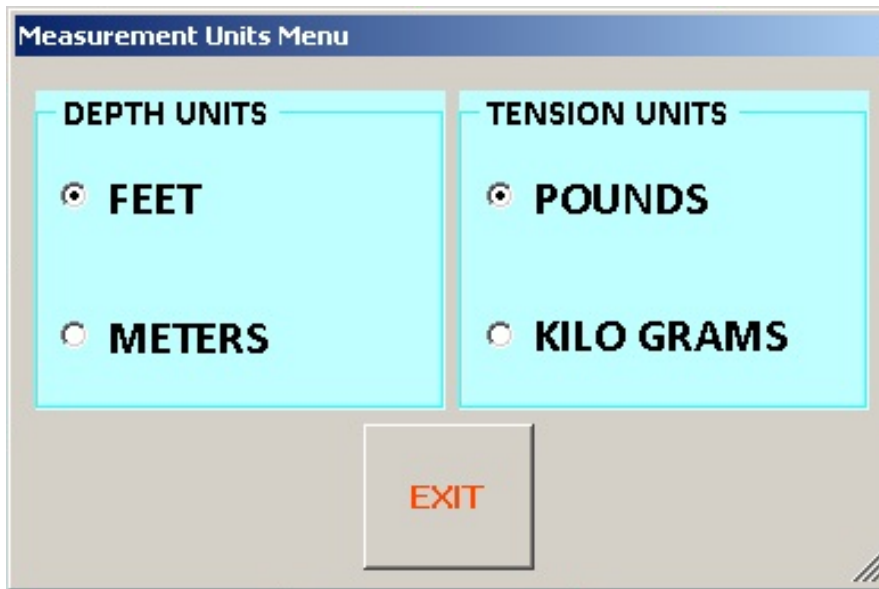
WHEEL SIZE – note that there are two available wheel sizes. One is Imperial and one is Metric. If the wheel size is not one of these options, change the Encoder In PPR (pulses per revolution) to adjust for the correct size.

3.8.3.2 LBS per PSI

The screenshot shows a 'Data Input' window with a light blue background. At the top left, the text 'Data Input' is displayed. Below this, there are two input fields. The first field is labeled 'Previous Value' and contains the number '20.00'. The second field is labeled 'Set Lbs/PSI(1-1000)' and is currently empty. To the right of these fields is a numeric keypad with buttons for digits 1 through 9, a decimal point, a minus sign, and a 'DEL' key. At the bottom left of the keypad area are two buttons: 'OK' and 'CANCEL'.

Use this setting to adjust the tension reading.

3.8.4 ENG/MET UNITS



This menu allows you to select the display units for either depth or tension. Default is feet and lbs.

3.8.5.1 LINE SIZE - 20" MAKO / ORCA / THRESHER HEAD

Line Size for Mako/Orca/Thresher Head

Line Size for Mako/Orca/Thresher Head

<input type="radio"/> .092"	<input type="radio"/> .150"	<input type="radio"/> 1/4"
<input checked="" type="radio"/> .108"	<input type="radio"/> .160"	<input type="radio"/> 9/32"
<input type="radio"/> .125"	<input type="radio"/> 3/16"	<input type="radio"/> 5/16"
<input type="radio"/> .140"	<input type="radio"/> 7/32"	<input type="button" value="Exit"/>

Select the line size by pressing the corresponding button. Default is .108

Note – select the head BEFORE selecting the line size.

3.8.5.2 LINE SIZE – SHARK HEAD

Line Size For Shark

Line Size For Shark

.092" .108" .125"

3/16"

Exit

Select the line size by pressing the corresponding button. Default is .108

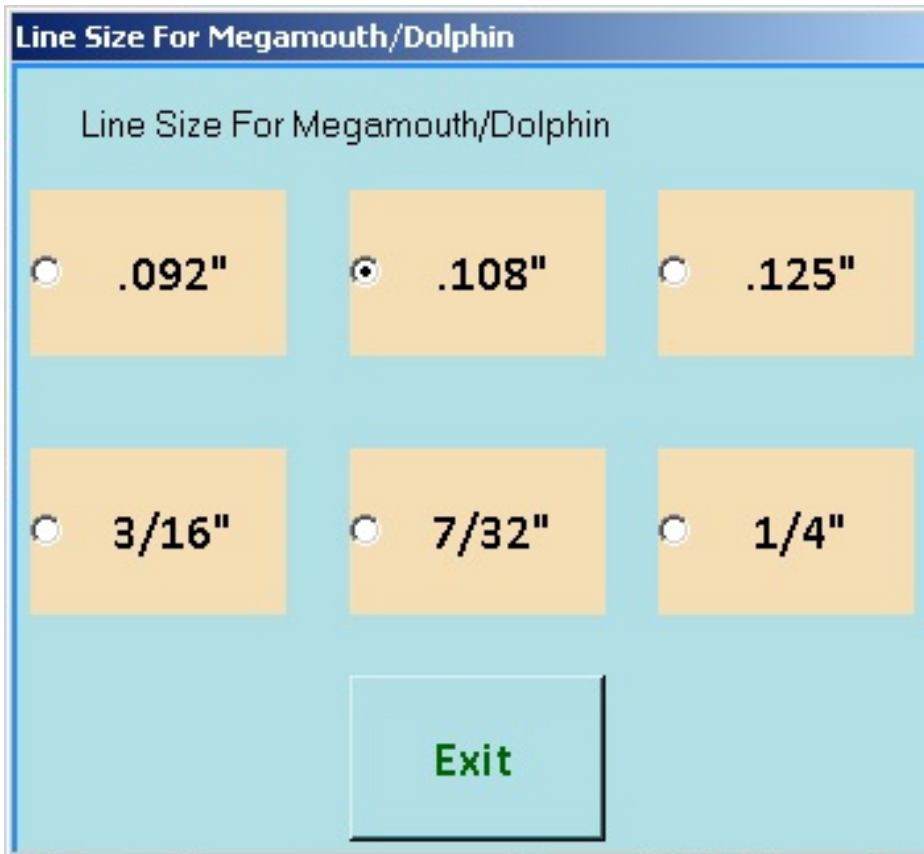
3.8.5.3 LINE SIZE – MEGAMOUTH AND DOLPHIN HEAD

Line Size For Megamouth/Dolphin

Line Size For Megamouth/Dolphin

<input type="radio"/> .092"	<input checked="" type="radio"/> .108"	<input type="radio"/> .125"
<input type="radio"/> 3/16"	<input type="radio"/> 7/32"	<input type="radio"/> 1/4"

Exit



3.8.5.4 LINE SIZE - 5K (Braided Line) HEAD

Line Size for 5K Head

Line Size for 5K Head

<input type="radio"/> 3/16"	<input type="radio"/> 5/16"	<input type="radio"/> .472"
<input checked="" type="radio"/> 7/32"	<input type="radio"/> 3/8"	<input type="radio"/> .484"
<input type="radio"/> 1/4"	<input type="radio"/> 7/16"	<input type="radio"/> .492"
<input type="radio"/> 9/32"	<input type="radio"/> 15/32"	<input type="button" value="Exit"/>

Select the line size by pressing the corresponding button. Default is 5/16

3.8.5.5 LINE SIZE – HYD SL

Line Size For HYD_SL

Line Size For HYD_SL

.092" .108" .125"

3/16"

Exit

3.8.6.1 CABLE MANAGEMENT

Cable Management		
Head Type HYD_SL	Line Size 3/16"	Cable NO BMW 7-6553 ELine
Mileage 8.8891 KFT	Stretch Coef 1.994 Ft/Kft/KLbs	Line Wt(Air) 85.30 LBS/KFT
Working Load 1200 Lbs	Max Tension 1990 Lbs	EXIT

Cable management is a new feature to this version of the Hoistman program. This feature enables the Operator to document cable usage as an aid in determining cable wear.

3.8.6.2 LINE SELECTION

Line Selection---Depth:Imperial/Tension:Imperial

N...	Cable NO.	Size	Mileage	Stretch Coef	Line Weight	Working L...	Maximum T...
1	BMW 7-6553 ELine	3/16"	8.8891 Kft	1.990 Fy/KFy/...	85.30 LBS/K...	1200 Lbs	1990 Lbs
2	BMW 12-6553 WL...	3/16"	0.0000 Kft	3.000 Fy/KFy/...	66.00 LBS/K...	1200 Lbs	1990 Lbs

A table is created for every available line size. In each table the Cable Number can be changed by selecting the line and pressing the 'Rename Line NO. button'. A new line can be added by pressing the 'New Line' button and an existing line can be deleted by selecting a line and pressing the 'Delete Line' button.

To change the parameters select the line in the table and then press the 'OK' button to close the table and return to the Cable Management sub-screen.

Note - When Head Type 'Other' is chosen all line sizes are shown in the Line Selection Table.

3.8.6.3 MILEAGE

Data Input

Previous Value

0.00

Enter New Value

Mileage Input

	1	2	3
	4	5	6
	7	8	9
OK	CANCEL	-	.
		0	DEL

Note – this value is per thousand feet.

3.8.6.4 STRETCH COEFFICIENT

Data Input

Previous Value
4.08

Enter New Value

Valid Range: 0.10 <--> 10.00

1	2	3			
4	5	6			
7	8	9			
OK	CANCEL	-	.	0	DEL

Note – this value is feet per thousand feet per thousand pounds. (FT/KFT/KLBS)

3.8.6.5 LINE WEIGHT

Data Input

Previous Value

31.78

1	2	3
4	5	6
7	8	9

Enter New Value

--	--

Valid Range: 1.00 <--> 1000.00 lbs/kft

OK	CANCEL	-	.	0	DEL
----	--------	---	---	---	-----

Note – this value is pounds per thousand feet. (LBS/KFT)

3.8.6.6 WORKING LOAD

Data Input

Previous Value

1800.00

Enter New Value

Working Load Input

1	2	3
4	5	6
7	8	9
OK	CANCEL	-
.	0	DEL

3.8.6.7 MAX TENSION

Data Input

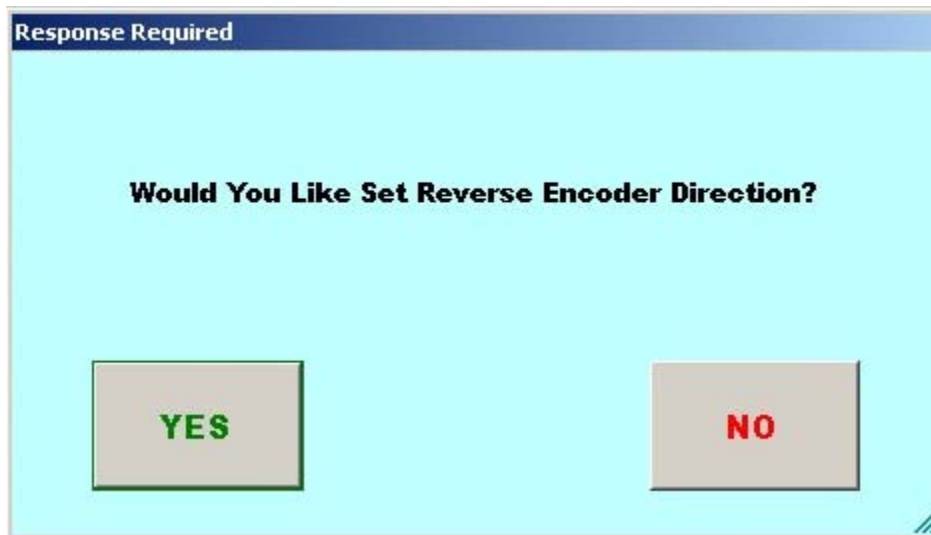
Previous Value
2105.00

Enter New Value

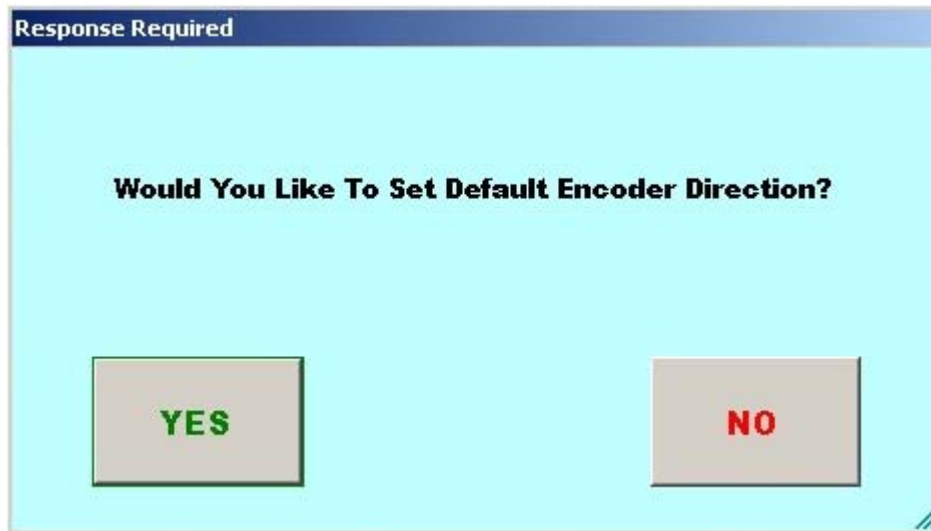
Maximum Tension Input

1	2	3			
4	5	6			
7	8	9			
OK	CANCEL	-	.	0	DEL

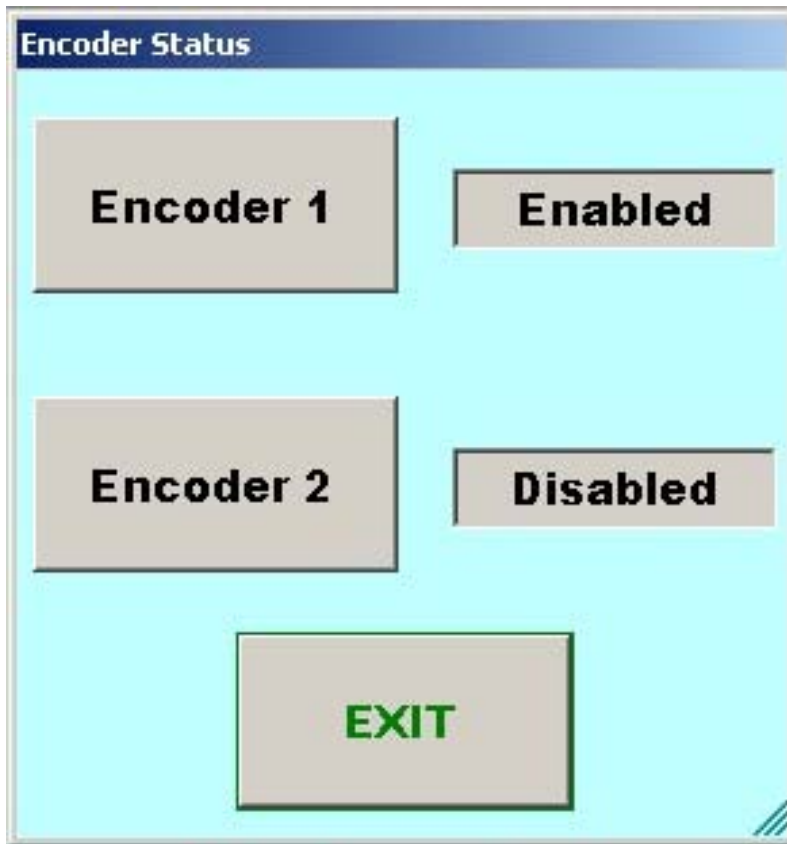
3.8.7 ENCODER DIRECTION



This screen allows you to change the direction of the encoder. If the depth is changing in the opposite direction to which the line is moving, this option can be used to correct it. On a dual wheel measuring device with two encoders, the encoder on one of the wheels will turn in the opposite direction from the other. If you change encoders, this feature can be used to change the encoder direction.

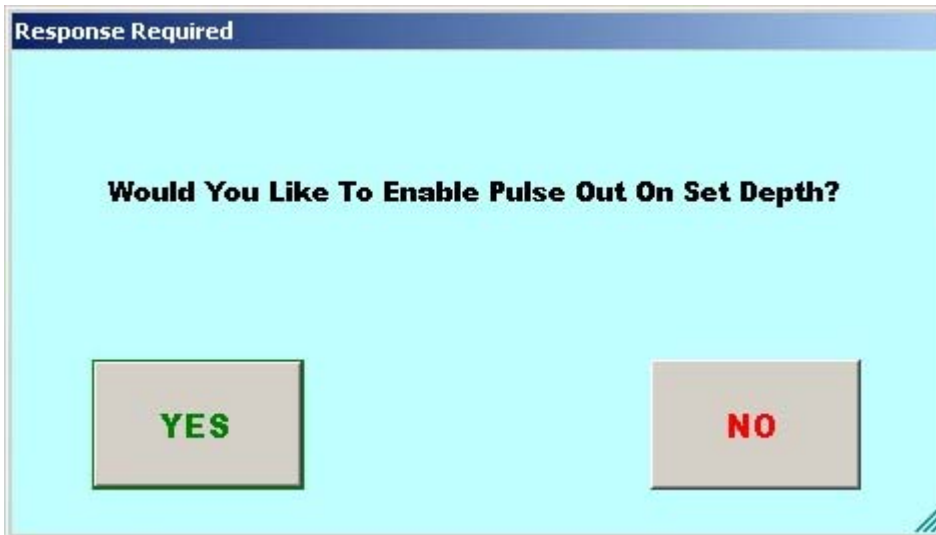


3.8.8 ENCODER STATUS



The panel provides for two redundant encoder input circuits, but only one encoder can be Enabled at a time. Note that the encoder direction (refer to Section 3.8.7) may need to be reversed when changing the enabled encoder.

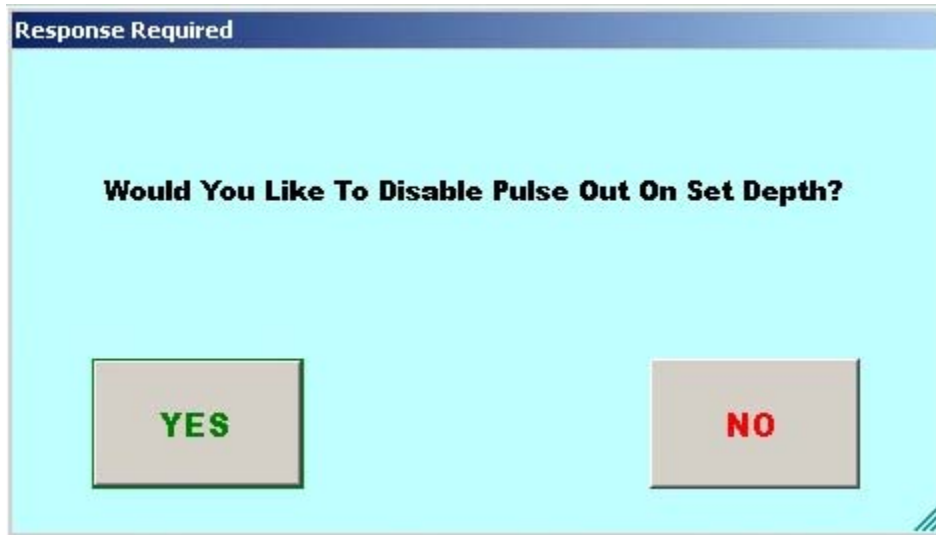
3.8.9.1 PULSES OUT ENABLE



NOTE - This menu determines whether encoder pulses are sent to the logging system when the operator performs a "set depth" or a "zero depth" action.

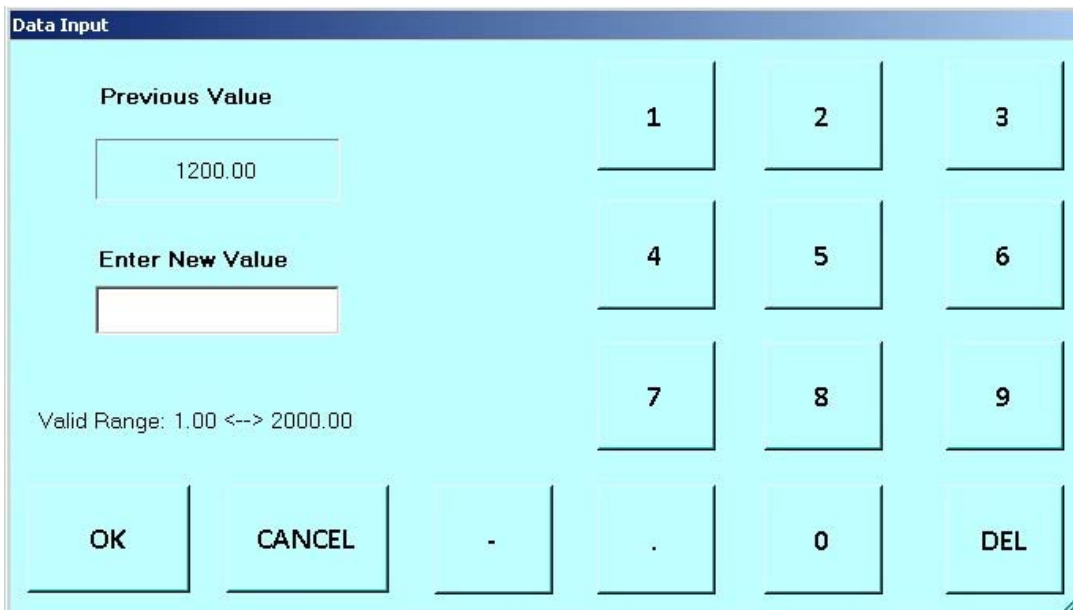
This message appears on this dialog screen when the 'pulses out on set depth' option is disabled.

3.8.9.2 PULSES OUT DISABLE



This message appears on this dialog screen when the 'pulsed out on set depth' option is enabled.

3.8.10 ENCODER IN PPR



Data Input

Previous Value

1200.00

Enter New Value

Valid Range: 1.00 <--> 2000.00

OK CANCEL - . 0 DEL

The range is 1-2000

The screen allows you to set the encoder pulses per revolution setting. This number should be printed on the encoder label.

Note - The encoder output pulses per foot/meter are not set by this screen, only the encoder input. The encoder output pulses per foot/meter are calculated from encoder PPR and Wheel Size.

Default is 1200 PPR

3.8.11 ENCODER OUTPUT PPF

Data Input

Previous Value

600.00

1	2	3
4	5	6
7	8	9

Enter New Value

--	--

Valid Range: 1.00 <--> 600.00

OK	CANCEL	-	.	0	DEL
----	--------	---	---	---	-----

This determines the encoder pulses out per foot and is independent of the encoder in pulses per revolution.

3.8.12.1 PRESSURE 1



Pressure 1 Setup

Name:

Enabled

Zero

Scale(1-30000psi)

10K PSI

15K PSI

PSI

PRESSURE UNITS

PSI KPa BAR

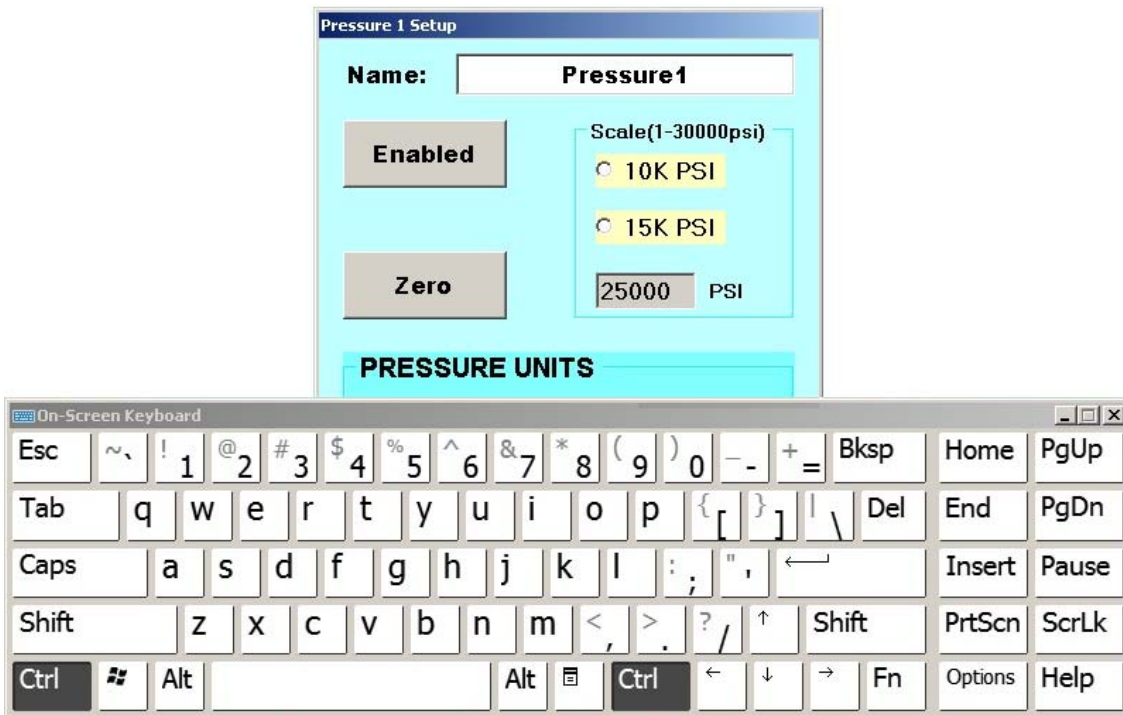
OK **Cancel**

This menu controls pressure 1 values and displays.

Note – this is the label that appears on the main screen above the pressure valve.

Note – the on-screen keyboard will appear when tapping inside the 'name' next box.

3.8.12.2 PRESSURE FULLSCALE

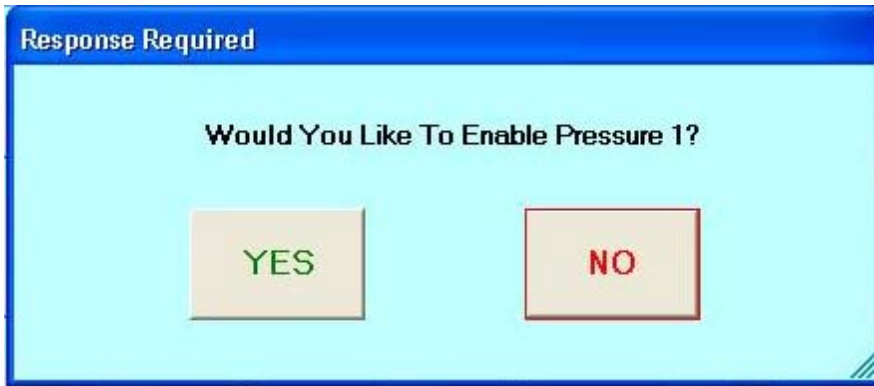


The menu adjusts the settings for Fullscale PSI and the default setting is 10000

PSI - This value corresponds with the 20ma point of a 4-20ma current loop.

Note – the on-screen keyboard will appear when tapping inside the PSI text box.

3.8.12.3 ENABLE / DISABLE PRESSURE 1



When Pressure 1 and/or Pressure 2 are enabled, the main screen will display these values. Once disabled these values will be removed from the main screen

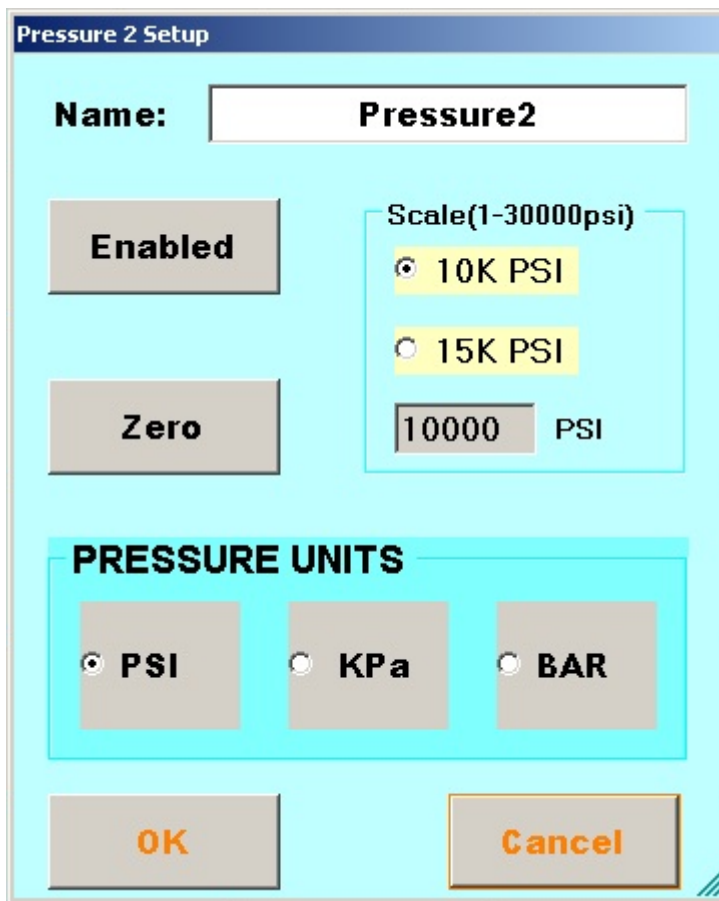
3.8.12.4 ZERO

Zero - Pressing this button establishes the zero pressure point. This corresponds with 4ma point on a 4-20ma current loop.

Note – There is no image associated with this action.

Note – The pressure will not be zeroed if the current is more than +/- 20% of 4ma.

3.8.13 PRESSURE 2



Pressure 2 Setup

Name:

Enabled

Zero

Scale(1-30000psi)

10K PSI

15K PSI

PSI

PRESSURE UNITS

PSI KPa BAR

OK **Cancel**

The settings menus for Pressure 2 are identical to Pressure 1. (See sections 3.8.12.1 through 3.8.12.4 for more information.)

3.8.14 RESTORE DEFAULTS



When this button is pressed, all the settings will be restored to their default values. This functions as a software reset. Depth will be zeroed.

Note - It is recommended to perform a restore defaults after a software update.

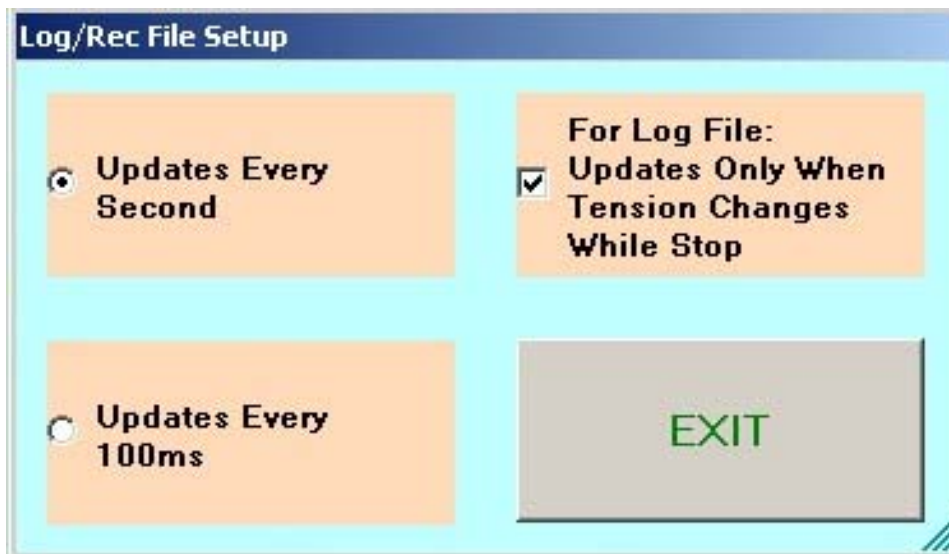
3.8.15 SUMMARY

The Summary Menu is a quick reference to what parameters are set. This is a static display. All of the defaults are shown.

Summary		
	Parameter	Value
1	Depth Units	Imperial
2	Tension Units	Imperial
3	Tension In Use	Calibrated
4	Head Type	HYD_SL
5	Tension Factor	1.00
6	Encoder In PPR	1200.00
7	Encoder Enable	Encoder 1
8	Encoder Direction	Normal
9	Encoder Out PPF	600.00
10	Depth Shim	1.00
11	Max Depth Alarm	20000.00
12	Surface Alarm	328.00
13	Maximum Depth Shutdown Enable	Disabled
14	Wheel Size	3.97
15	Stretch Correction	Disabled
16	Tension S/D	5000.00
17	Tension Alarm	1223.55
18	Delta Tension S/D	1000.00
19	Delta Tension Alarm	300.00
20	Line Size	3/16"
21	Line Weight	44.44
22	Line Stretch Coef	5.55
23	Surface Shutdown Enable	Disabled
24	Lbs/PSI (For HYD_SL Head)	20.00
25	HYD_SL Wheel Size	1.25 Mt.
26	Pulse Out On Set Depth	Enabled
27	Acquisition Board	2K Board
28	Acq Version	2003.10


EXIT

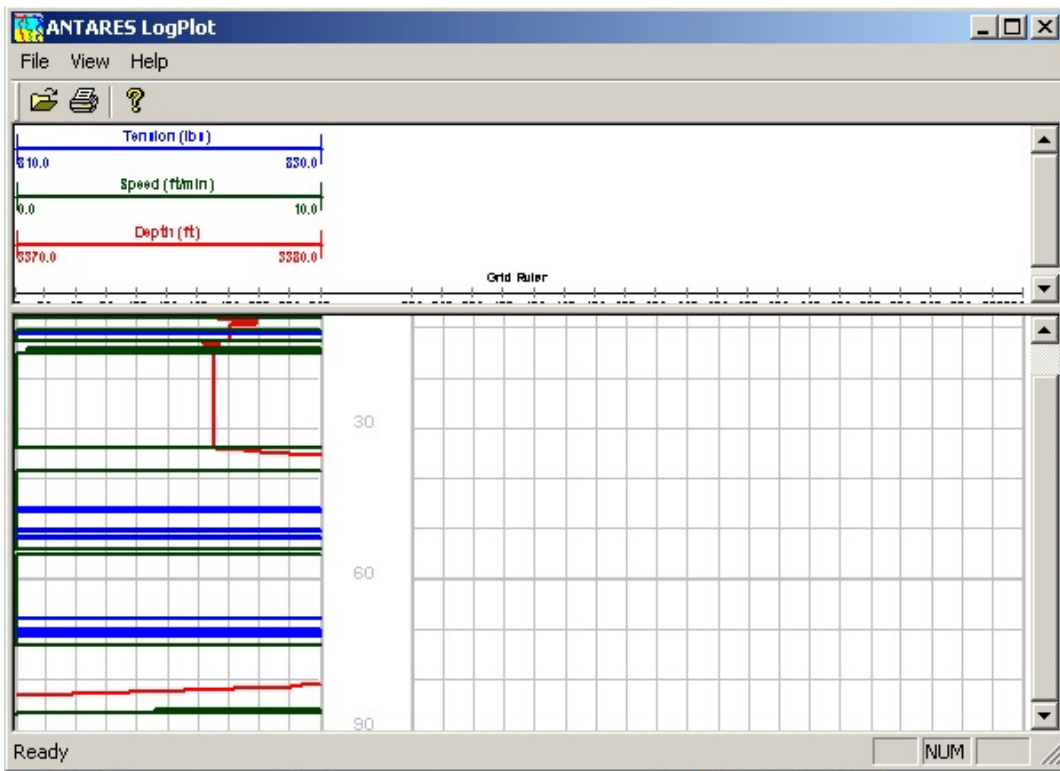
3.8.16 LOG FILE SETUP



The operator can choose to add data to the log file every 100 milliseconds or every second. Be aware that the 100 millisecond option potentially results in large log files.

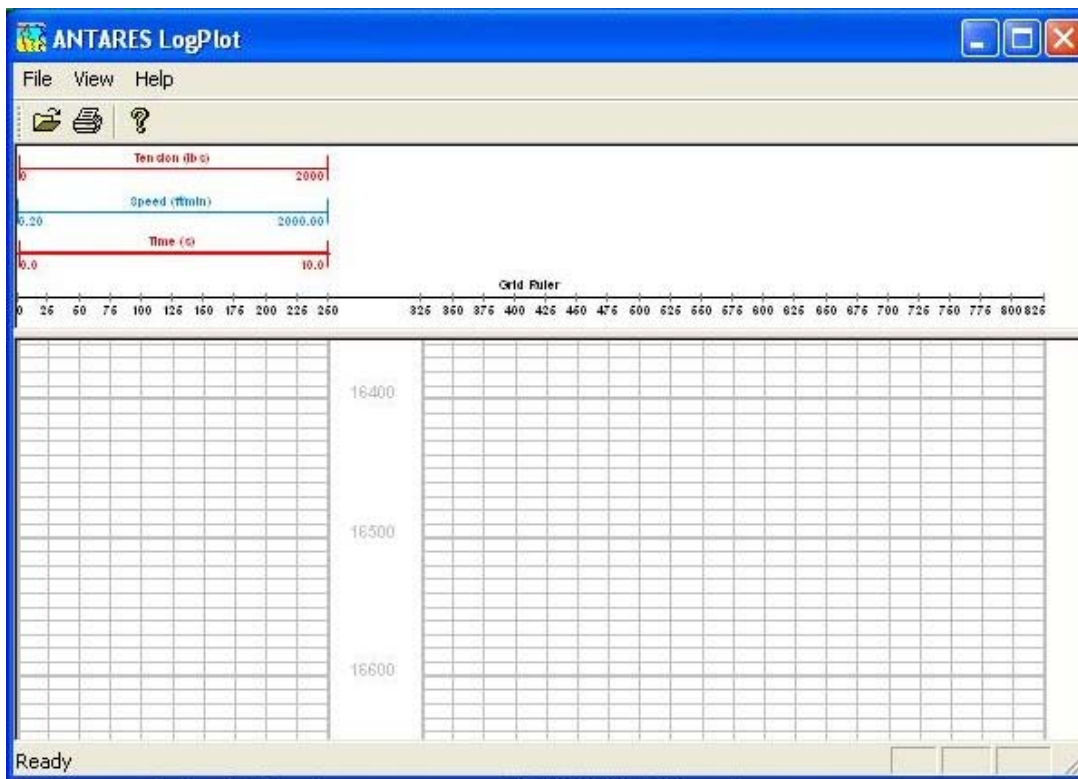
Note - The 'Update Only When Tension Changes option' enabled means that the log file will not be updated when the tool is stopped and tension does not change.

3.8.17 START TIME LOGPLOT



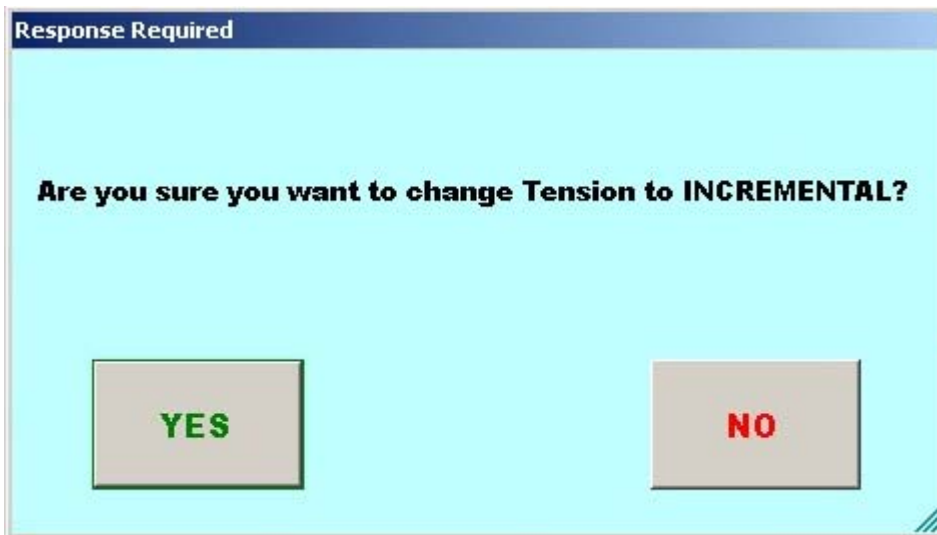
The LogPlot is a third-party plotting program that can be invoked from this menu. A time-stamped file is automatically created in c:\logplotfiles\ subdirectory.

3.8.18 START DEPTH LOGPLOT



Note - the Start Depth Logplot button is similar to the Start Time Logplot button except the Depth Logplot is depth driven and the Time Logplot is time driven.

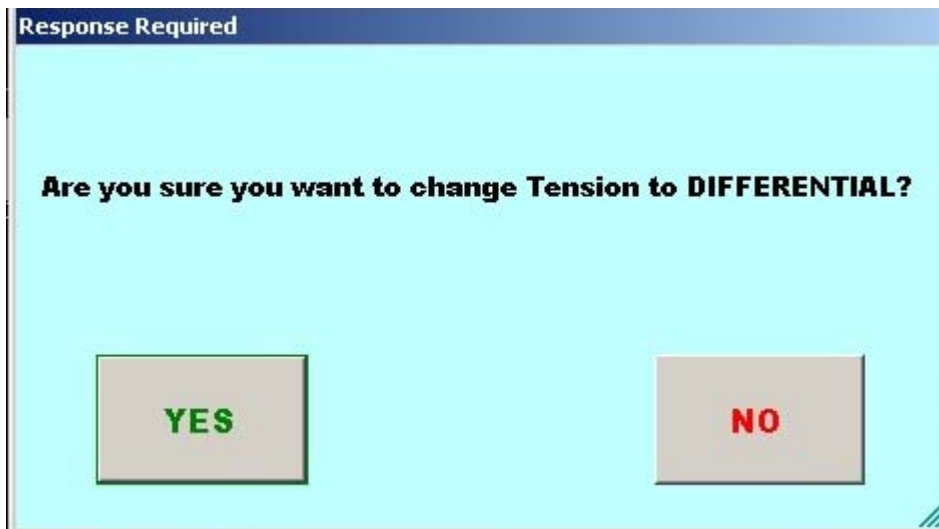
3.8.19.1 INCREMENTAL



This feature affects how the main screen differential / incremental gauge needle movement behaves.

This message appears in the dialog when the gauge is set to differential mode.

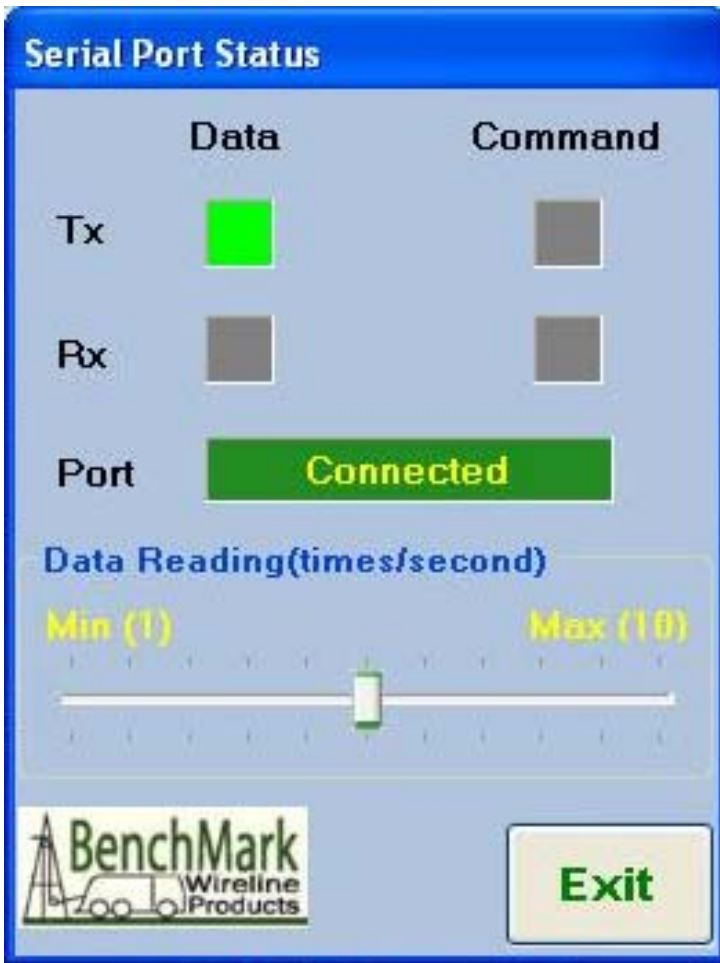
3.8.19.2 DIFFERENTIAL



This feature affects how the main screen differential / incremental gauge needle movement behaves.

This message appears in the dialog when the gauge is set to incremental mode.

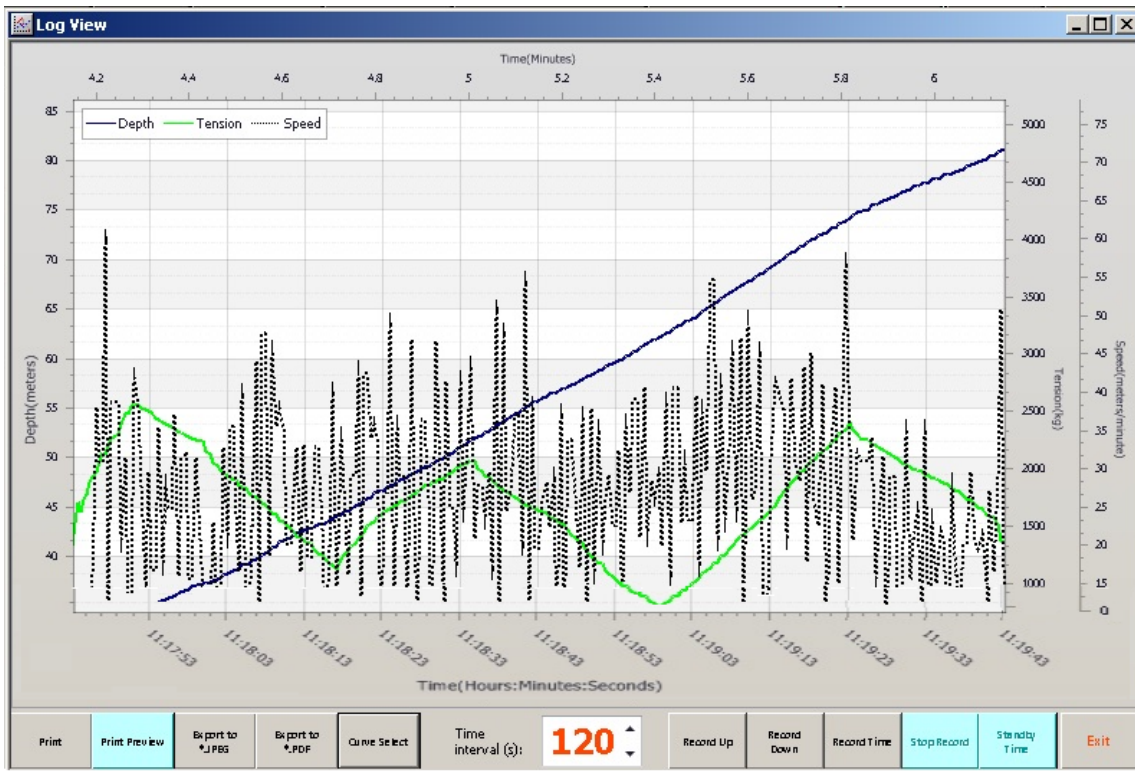
3.8.20 SERIAL PORT STATUS



This dialog is intended for troubleshooting purposes only. The Operator can monitor this screen to see if there are any communication problems on the Serial Port link between the hoistman program and the Acquisition board.

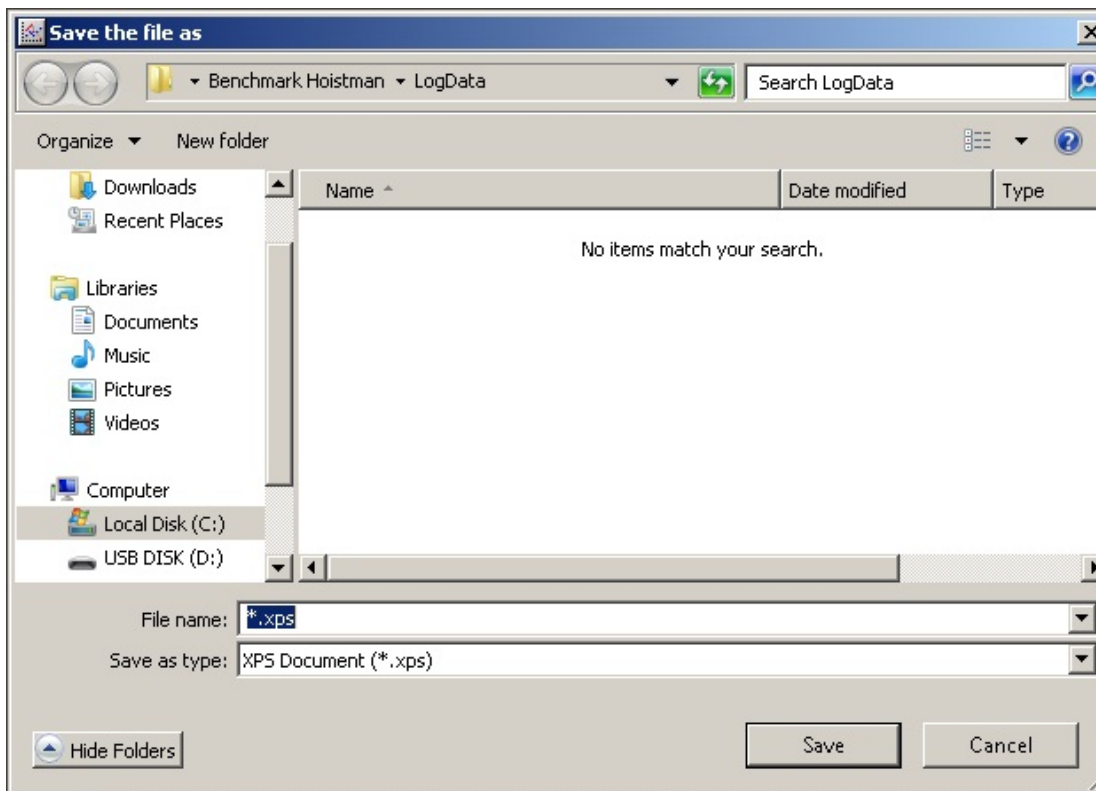
The recommended setting is the fastest setting without receiving 'time-out' messages in the port text box.

3.9.1 LOG VIEW



This is the hoistman program built-in plotting utility. The scales are automatically determined (auto-scaling). Below are the options:

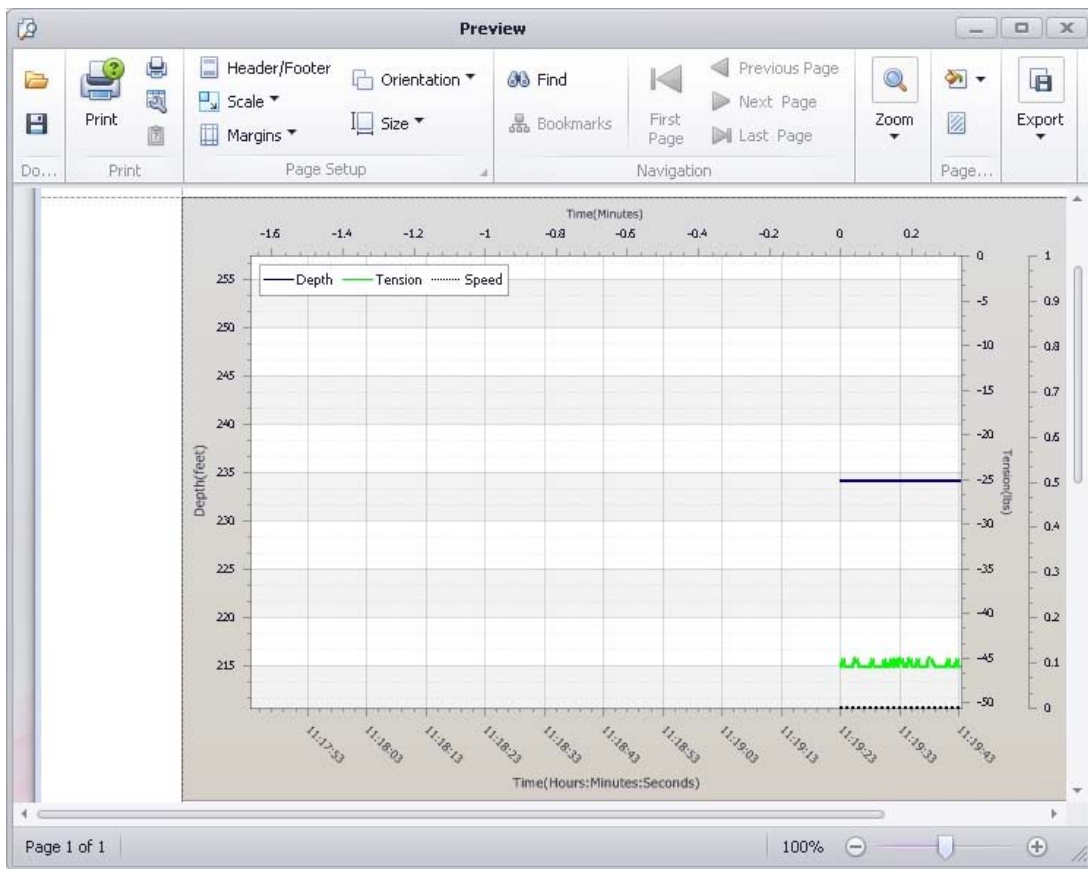
3.9.2 LOG - PRINT



The panel must be connected to a USB printer and the printer drivers must be pre-installed for this option to print.

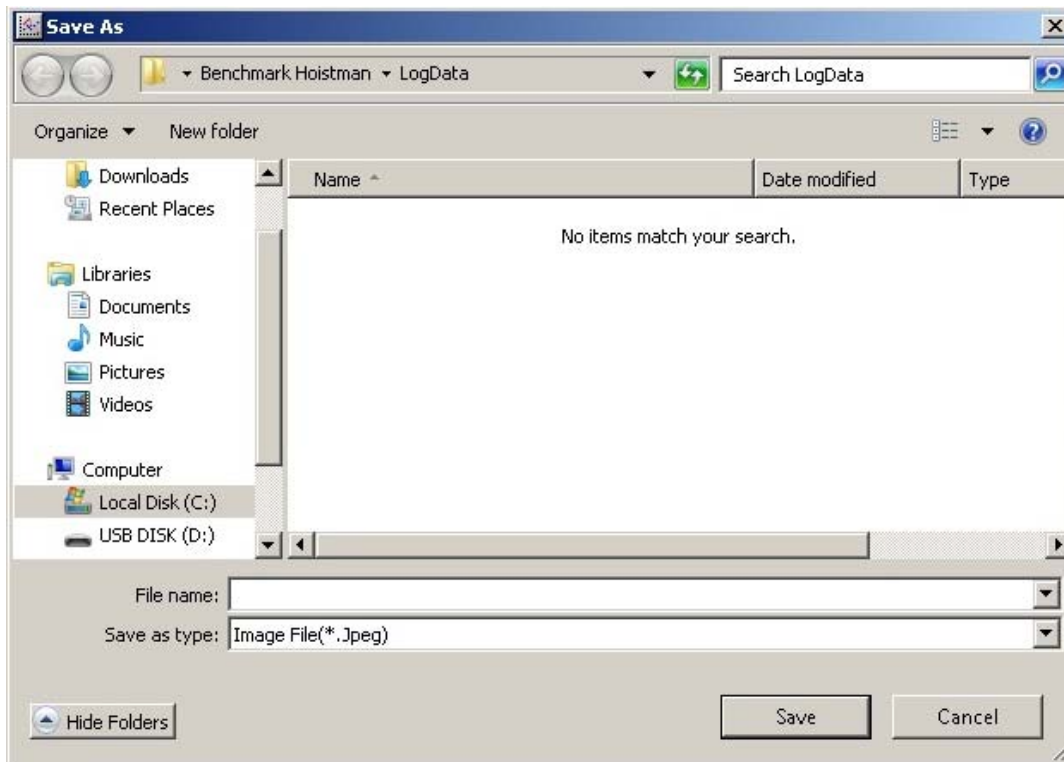
Note – The image above appears if no printer is installed.

3.9.3 LOG - PRINT PREVIEW



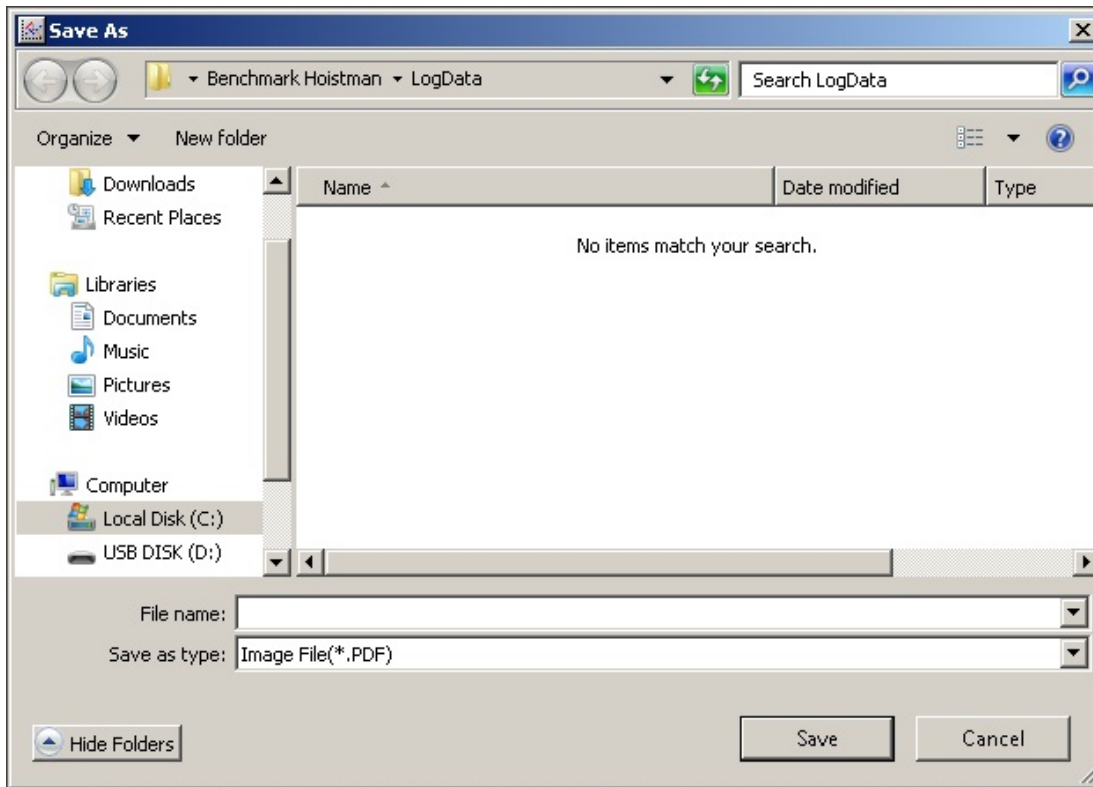
This allows the Operator the option of viewing the printed page before actually printing.

3.9.4 LOG - EXPORT TO JPG



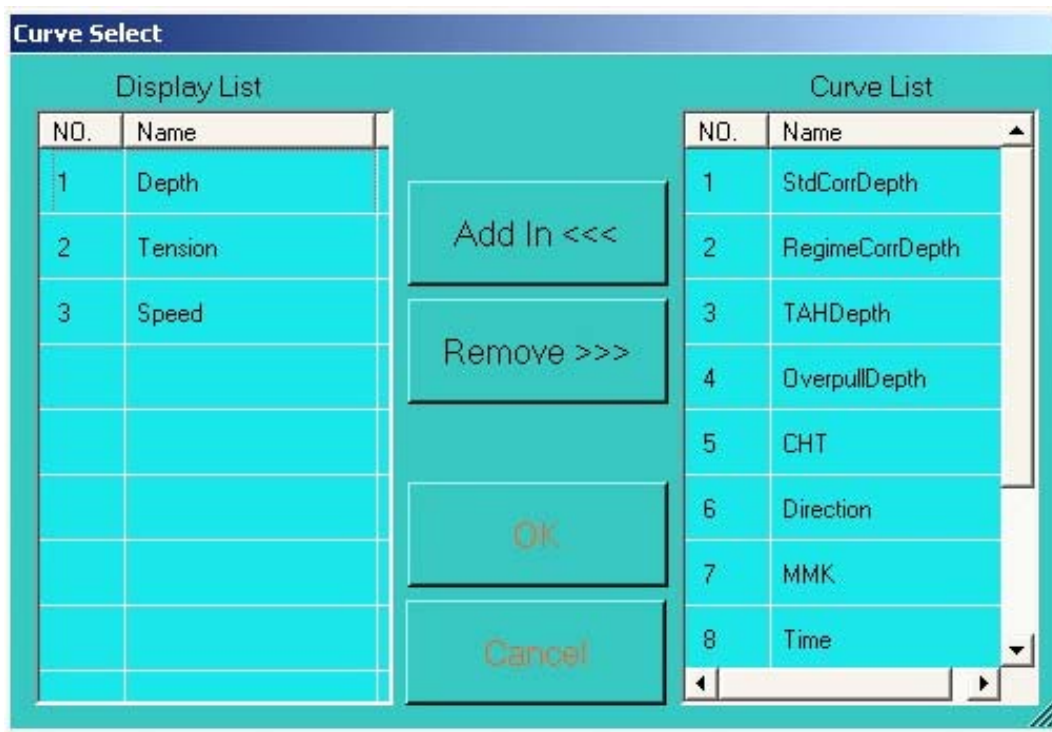
The plot can be exported to a .jpg file format.

3.9.5 LOG - EXPORT TO PDF



The plot can be exported to a .pdf file format.

3.9.6 LOG - LOGVIEW CURVE SELECT



All available inputs are listed in the table on the right and the Operator can choose which inputs to add to the plot by moving the selected input to the table on the left.

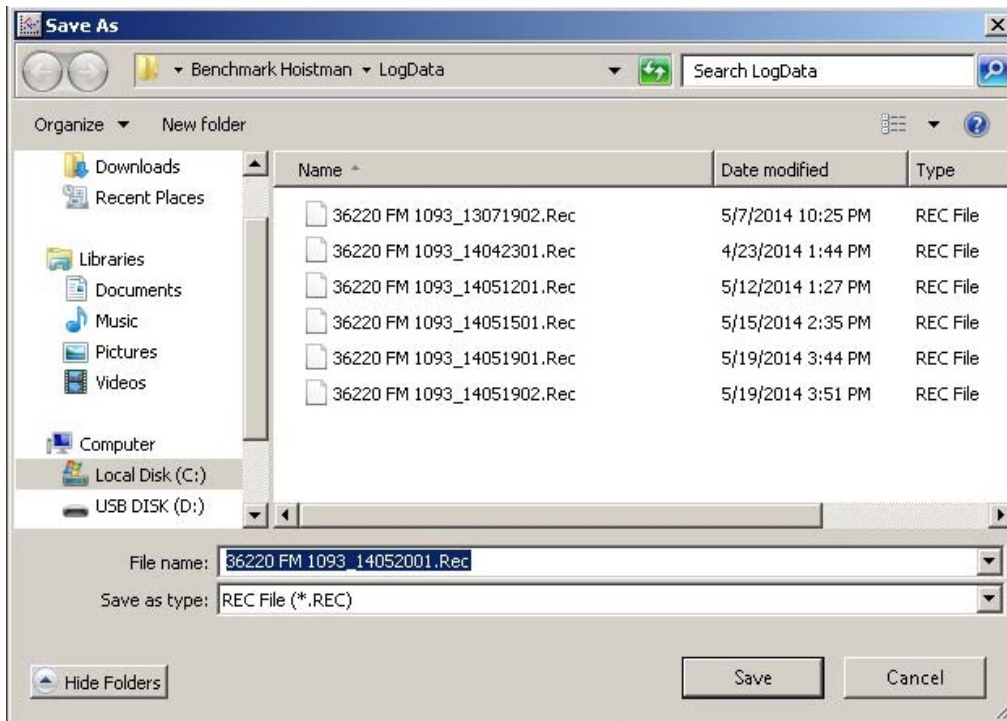
Record Up:

The Operator can instruct the plotting utility to only plot when the depth is moving uphole.

Record Down:

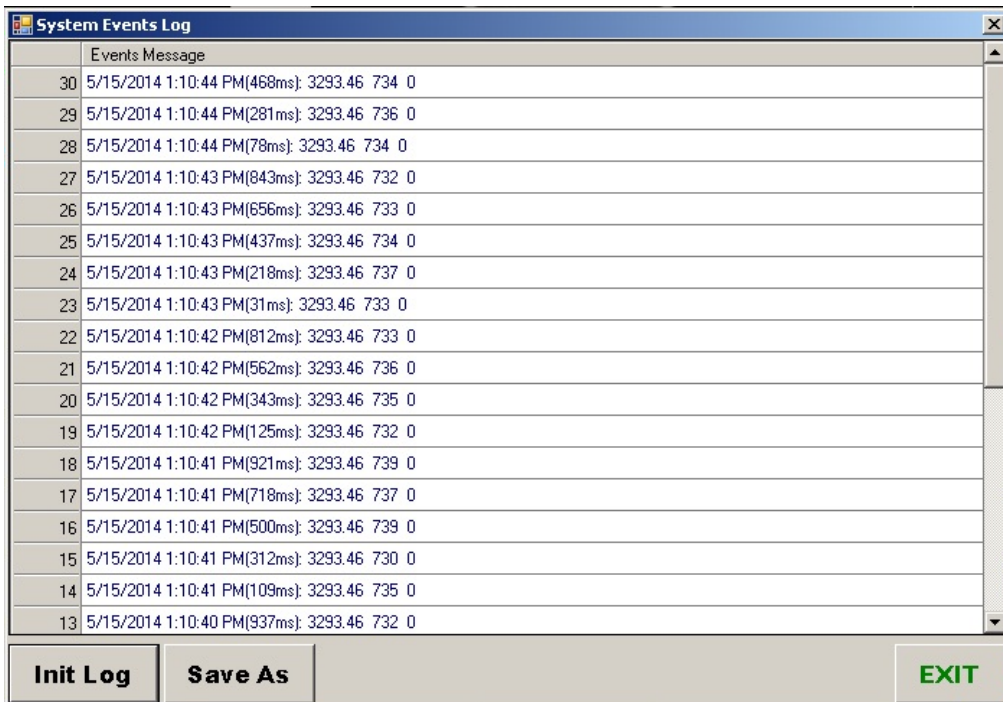
The Operator can instruct the plotting utility to only plot when the depth is moving downhole.

3.9.7 LOG - RECORD TIME



The Operator can instruct the plotting utility to plot all of the time (time-based).

3.9.7.1 SYSTEM EVENTS LOG

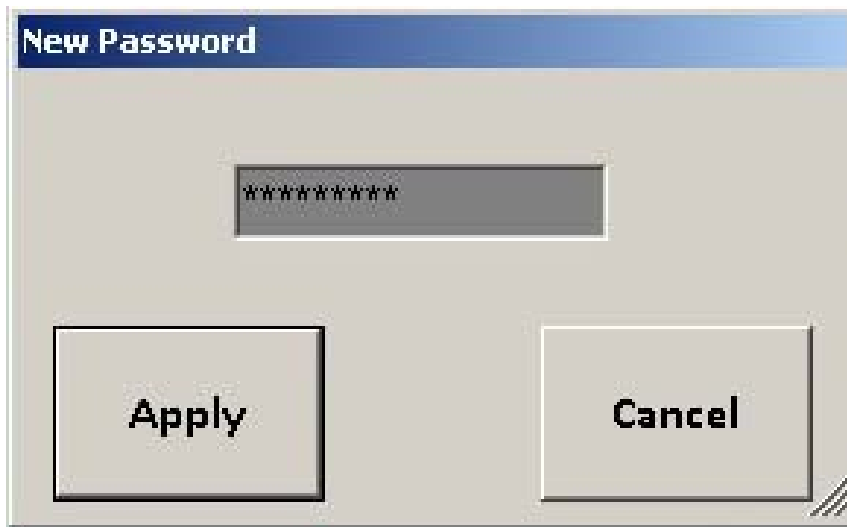


	Events Message
30	5/15/2014 1:10:44 PM(468ms): 3293.46 734 0
29	5/15/2014 1:10:44 PM(281ms): 3293.46 736 0
28	5/15/2014 1:10:44 PM(78ms): 3293.46 734 0
27	5/15/2014 1:10:43 PM(843ms): 3293.46 732 0
26	5/15/2014 1:10:43 PM(656ms): 3293.46 733 0
25	5/15/2014 1:10:43 PM(437ms): 3293.46 734 0
24	5/15/2014 1:10:43 PM(218ms): 3293.46 737 0
23	5/15/2014 1:10:43 PM(31ms): 3293.46 733 0
22	5/15/2014 1:10:42 PM(812ms): 3293.46 733 0
21	5/15/2014 1:10:42 PM(562ms): 3293.46 736 0
20	5/15/2014 1:10:42 PM(343ms): 3293.46 735 0
19	5/15/2014 1:10:42 PM(125ms): 3293.46 732 0
18	5/15/2014 1:10:41 PM(921ms): 3293.46 739 0
17	5/15/2014 1:10:41 PM(718ms): 3293.46 737 0
16	5/15/2014 1:10:41 PM(500ms): 3293.46 739 0
15	5/15/2014 1:10:41 PM(312ms): 3293.46 730 0
14	5/15/2014 1:10:41 PM(109ms): 3293.46 735 0
13	5/15/2014 1:10:40 PM(937ms): 3293.46 732 0

The System Events Log can be saved to disk by pressing the “save-as” button this file contains event information that can be used for troubleshooting purposes.

The pressing “Init Log” button will delete the existing event log and create a new event log.

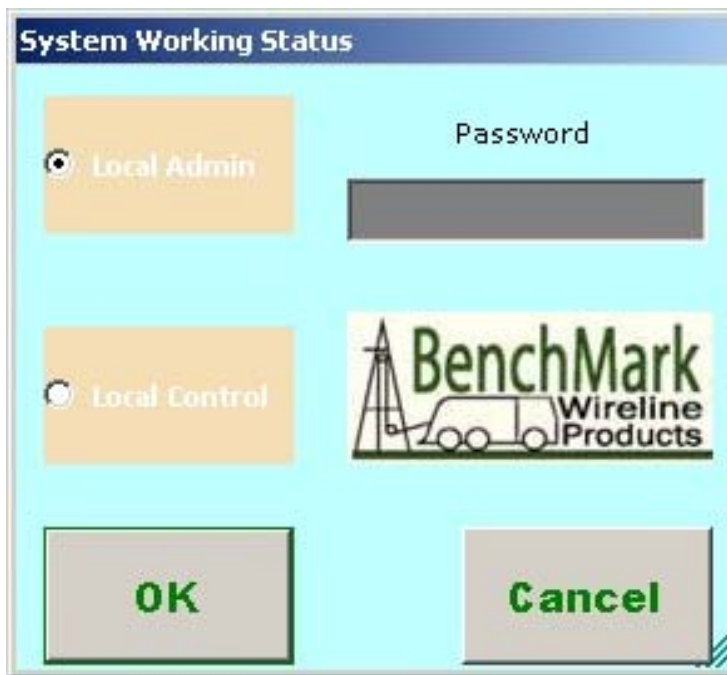
3.9.8 NEW PASSWORD



This Password can only be changed by logging in to the program as an administrator.

Note – If the password is lost, the hoistman program must be reinstalled to reset the password.

3.9.9 SYSTEM WORKING STATUS



This dialog allows the Operator to change the password if he is already an Administrator.

Local Admin – in this mode the operator is allowed to change all parameters.

Local Control – in this mode the operator is restricted in their ability to change some parameters.

3.9.10 SHOW ALL

Pressing this button restores all invisible text boxes to visible mode on the main screen.

3.9.11 START JOB

Start Job - Information For Record File Header	
Company	BenchMark WireLine
Well	36220 FM 1093
Field	Houston
Unit Crew	BMW-6552
Operator	David Du
Job #	1
File to Record (* .REC * .LAS)	C:\Benchmark Hoistman\LogData\36220 FM 1093_14051501.Rec 36220 FM 1093_14051501.LAS

An on-screen keyboard is provided automatically for data entry.

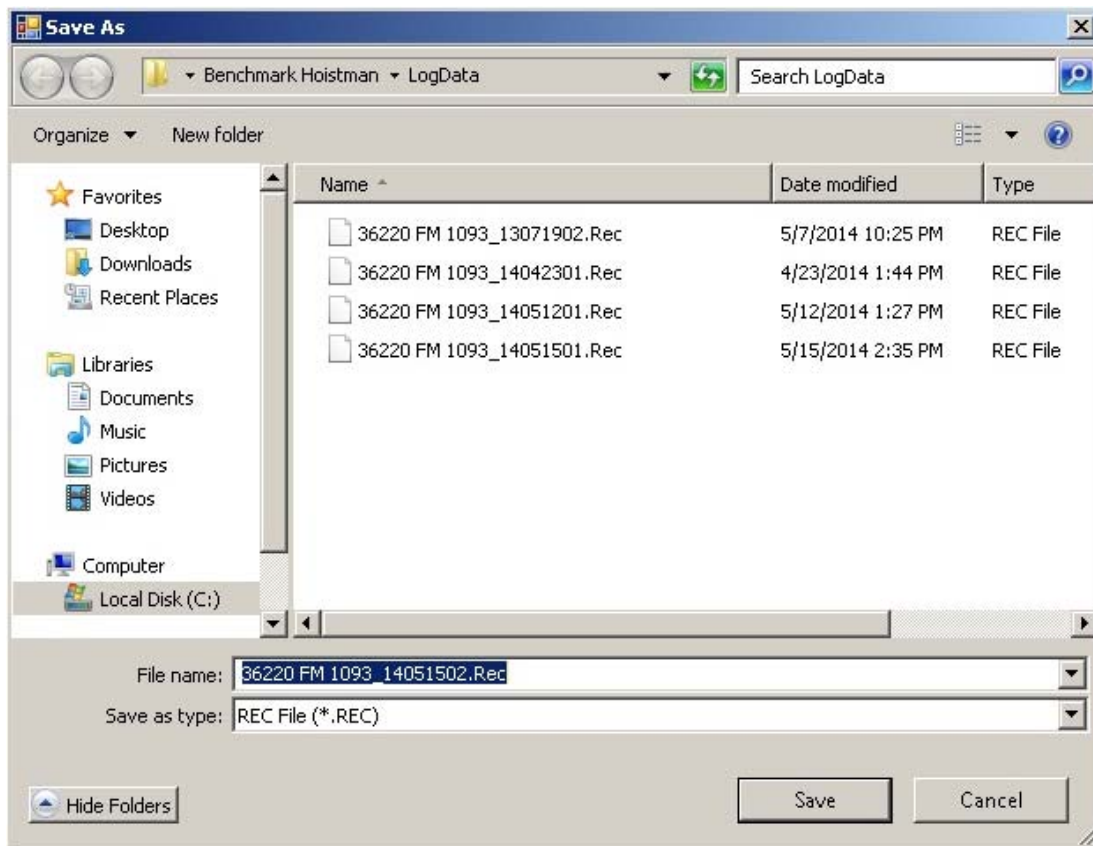
Upon closing of the dialog screen a LAS file is created using the time stamp as the name of the file. This file name is displayed on the main screen. If job is not started the main screen will show no file – must start job!

Note: No LAS file is created until the operator chooses 'start job.'

The LAS files are stored in the c:\las files\subdirectory

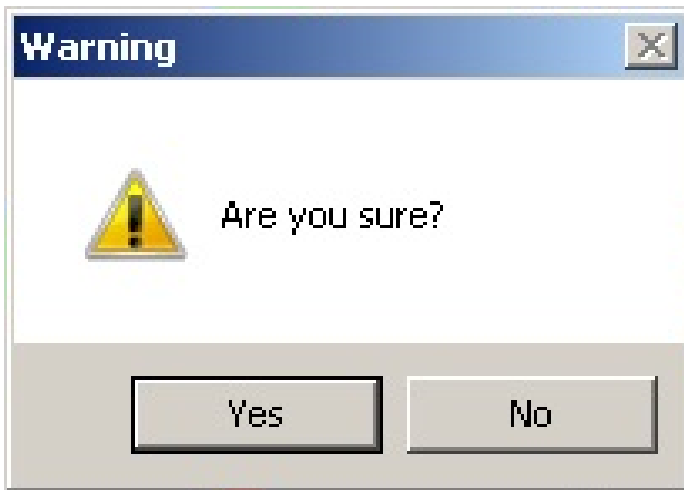
Rec File – upon the closing of this dialog screen a Rec File is also created. A Rec File is a text file that is simpler than the LAS file.

3.9.12 START JOB BROWSE



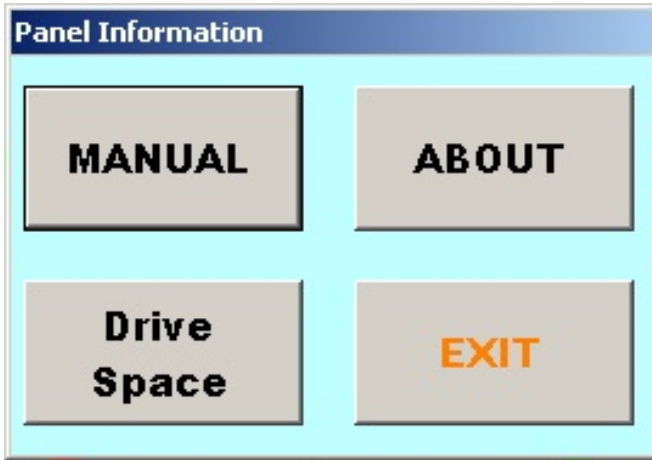
File names are automatically generated but the operator can choose to rename the file by tapping in the 'file to record' text box.

3.9.13 END JOB



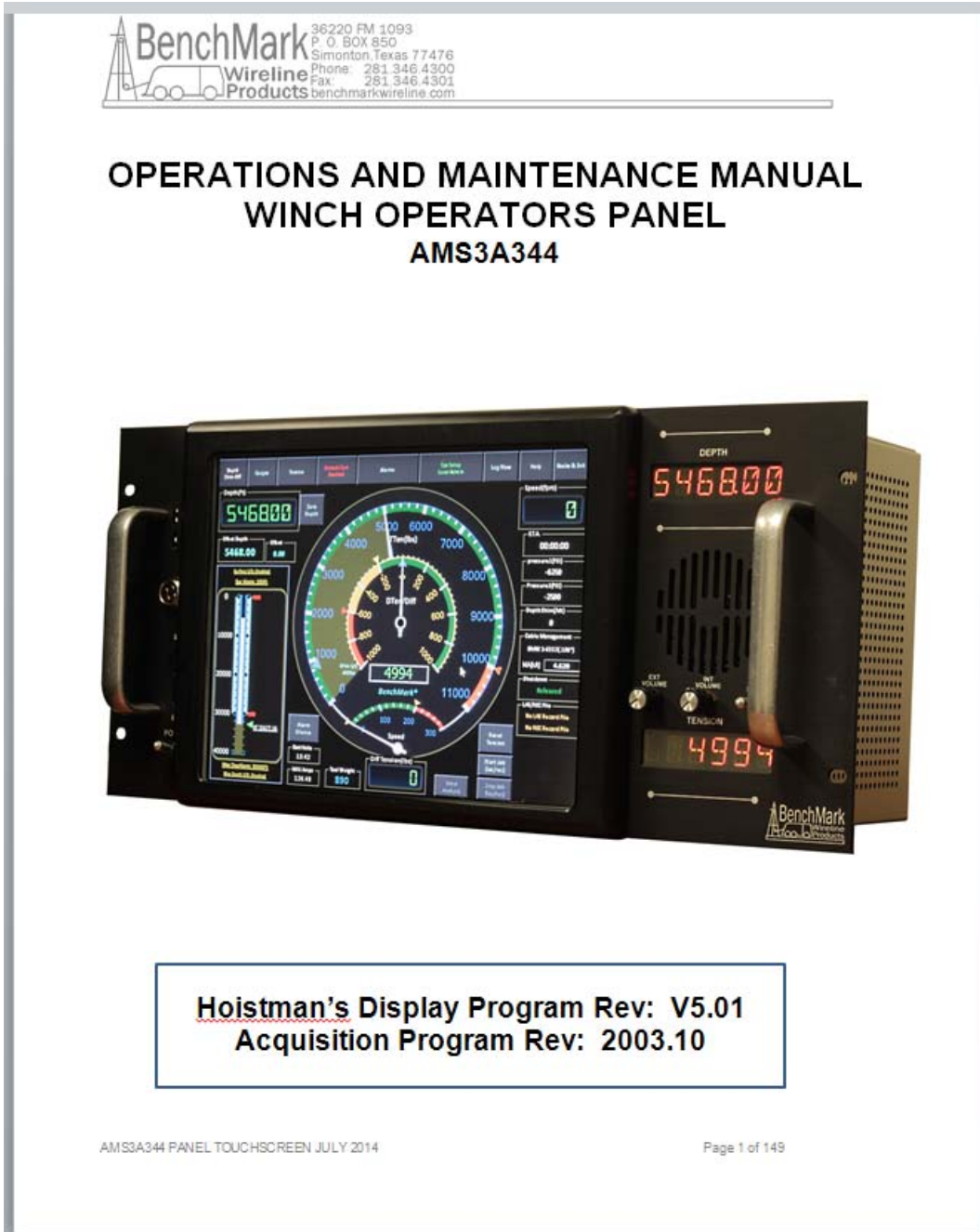
If the response is "Yes" then the LAS file and the Rec Files are closed. The button "Start Job" is enabled once again and all buttons in the Setup Menu are re-enabled.

3.10.1 HELP MENU



The HELP button will display the four options displayed above.

3.10.2 HELP MANUAL



MANUAL button invokes the Adobe Acrobat Reader with c:\manual.pdf. It will bring up this manual in pdf format.

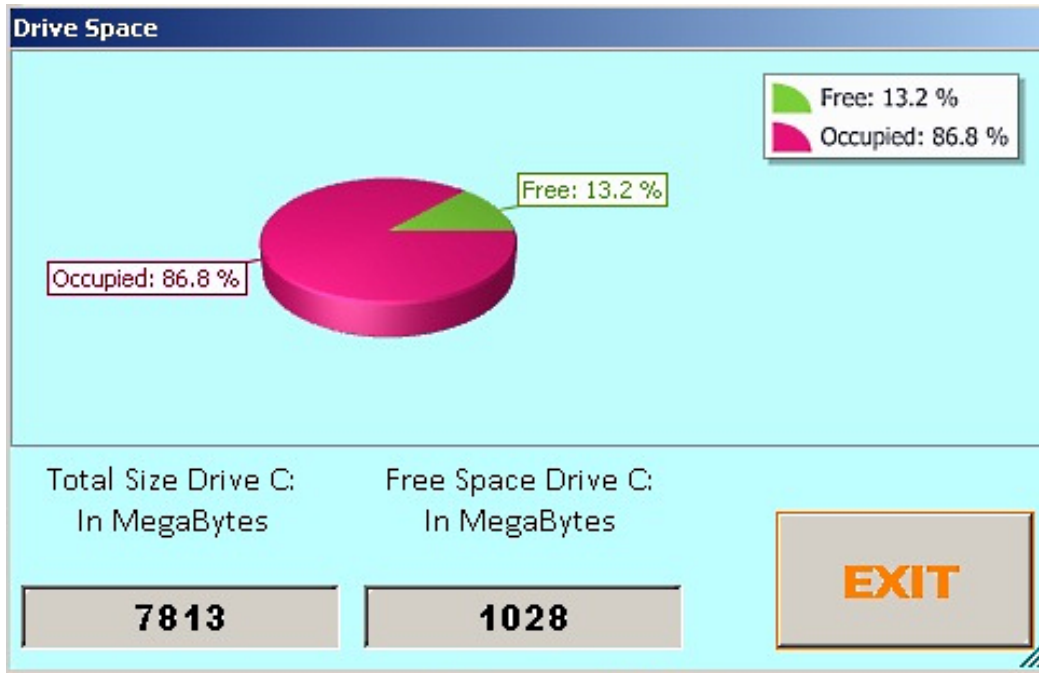
3.10.3 ABOUT SCREEN



The ABOUT button displays the software revisions.

There are two programs that can be updated, the HOISTMAN program which is run by the PC and the ACQUISITION program that is run by the real time board.

3.10.4 DRIVE SPACE



Note - The drive space button provides a simple way to view the available storage space on the compact flash card.

3.11.1 EXIT



The Exit sub-menu allows the Operator to choose to Minimize the Hoistman program (program still running), Exit to Windows, or Shutdown Windows. The Maximize and Resize option is not yet available.

3.11.2 REDUNDANT BACKUP SOLID STATE DEVICE

The Model 344 panel provides a backup solid state device that can be enabled in the case that the default drive operating system becomes corrupted and unbootable.

WARNING – only one device can be enabled at a time or damage will result to both operating systems.

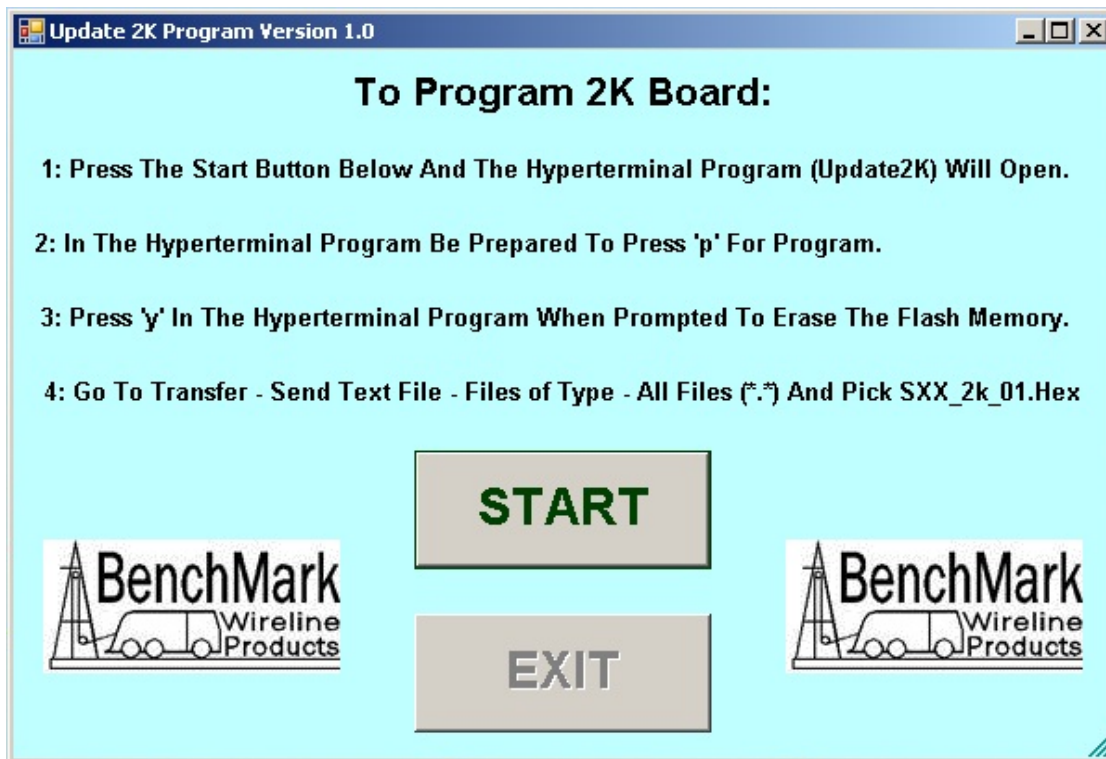
To change the bootable device from the panel default (IDE channel 1 master) to the backup (IDE channel 0 master) cycle power on the panel and press the 'DEL' key (on the USB keyboard plugged into the front panel) and wait to enter the CMOS setup utility. Now proceed to the 'INTEGRATED PERIPHERALS' menu and then proceed to the 'ON-CHIP IDE DEVICE' menu and disable the 'ON-CHIP SECONDARY PCI IDE' and then enable the 'ON-CHIP PRIMARY PCI IDE'. Press the 'ESC' key twice and then navigate to 'SAVE & EXIT SETUP' and press 'Y' for Yes-save and quit.

4.0 INTERNAL PC DATA FILES AND SOFTWARE UPDATE PROCEDURES

NOTE: A USB KEYBOARD IS RECOMMENDED FOR SOFTWARE INSTALLATION.

The Hoistman Program is released as a .MSI installation file. The Operator double-clicks on the .msi file and the installation will proceed. It is recommended to use the default location (C:\Benchmark Hoistman\) for the installation.

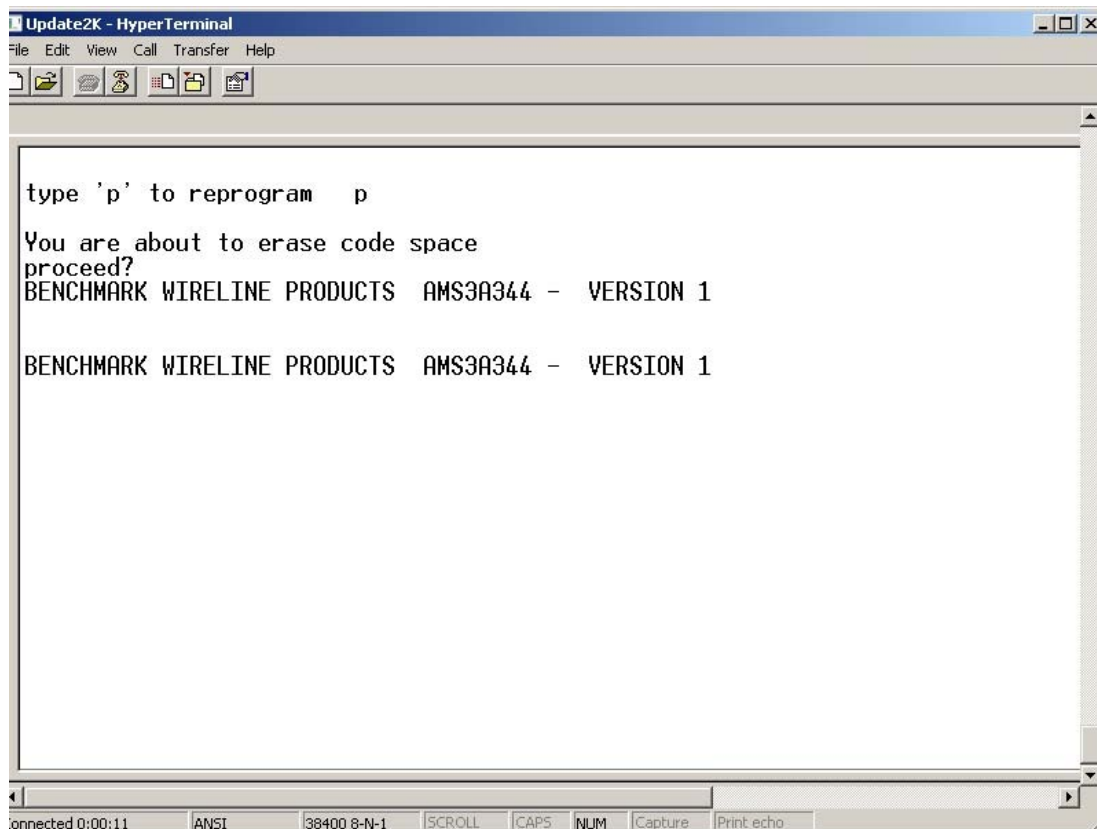
4.1 LAS AND HLOG, DATA FILES AND REC FILES Files located in C:\benchmark hoistman\logdata



NOTE: A USB KEYBOARD IS RECOMMENDED FOR SOFTWARE INSTALLATION.

The Hoistman Program is released as a .MSI installation file. The Operator double-clicks on the .msi file and the installation will proceed. It is recommended to use the default location (C:\Benchmark Hoistman\) for the installation.

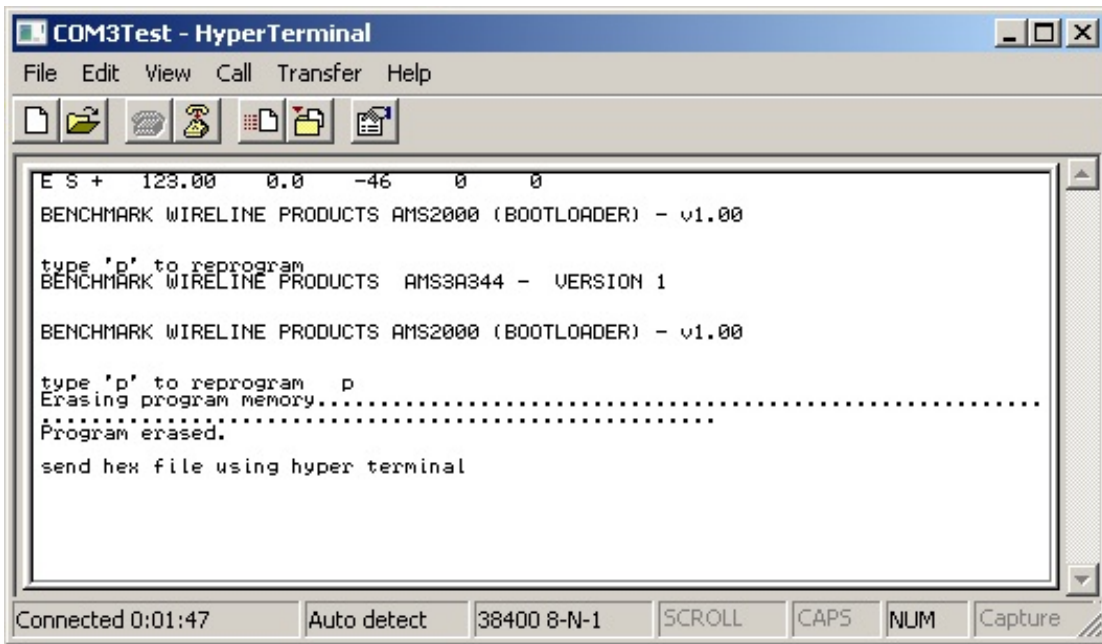
4.2.1 UPDATE 2K PART 1



```
Update2K - HyperTerminal
File Edit View Call Transfer Help
type 'p' to reprogram p
You are about to erase code space
proceed?
BENCHMARK WIRELINE PRODUCTS AMS3A344 - VERSION 1
BENCHMARK WIRELINE PRODUCTS AMS3A344 - VERSION 1
connected 0:00:11  ANSI  38400 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

The Acquisition program is installed using the Software Install Utility which can be accessed by double-clicking the Desktop icon "Software Install". The utility screen contains the instructions for re-programming the Acquisition board. Upon pressing the 'Start' button the utility will automatically open a Hyperterminal session and then send a re-boot command to the Acquisition board.

4.2.2 UPDATE 2K PART 2

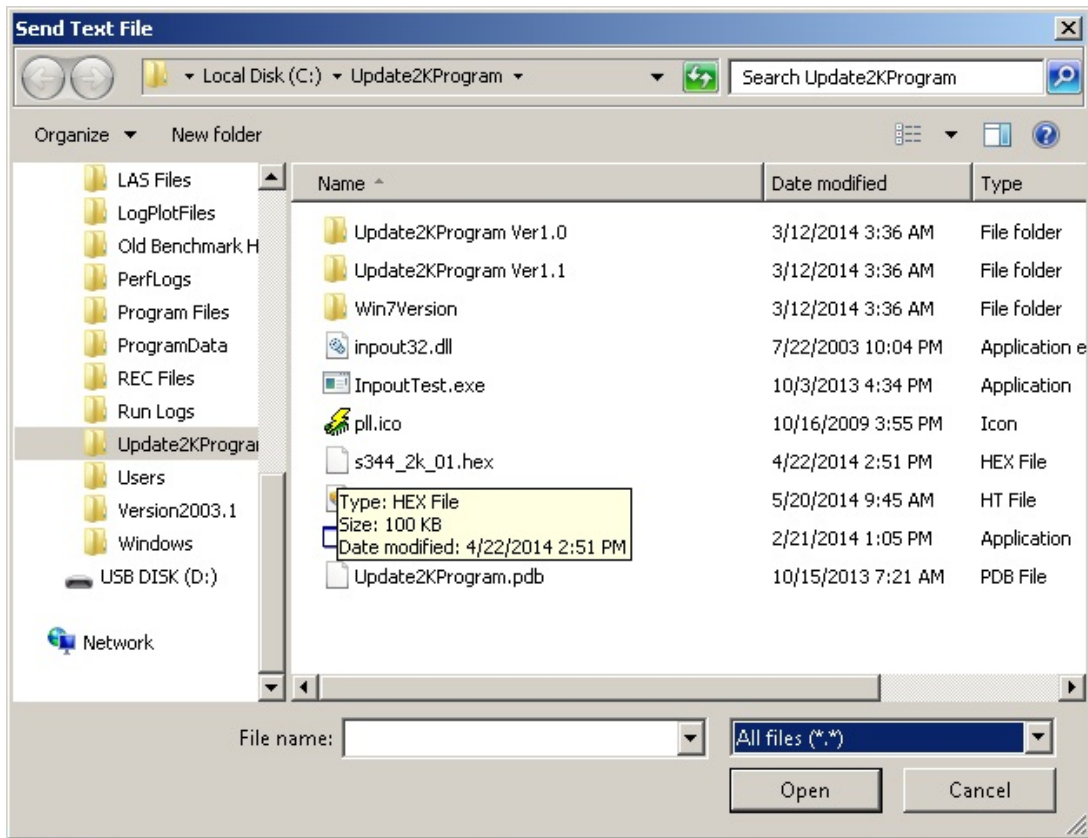


The Operator must be prepared to quickly type a 'p' as soon as the message appears on the Hyperterminal screen. If the opportunity to press 'p' passes, repeat the procedure from the start again.

After receiving the 'p' the utility will respond with this message:

```
Erasing Program
Memory.....
.....
Program Erased.
send hex file using hyperterminal
```

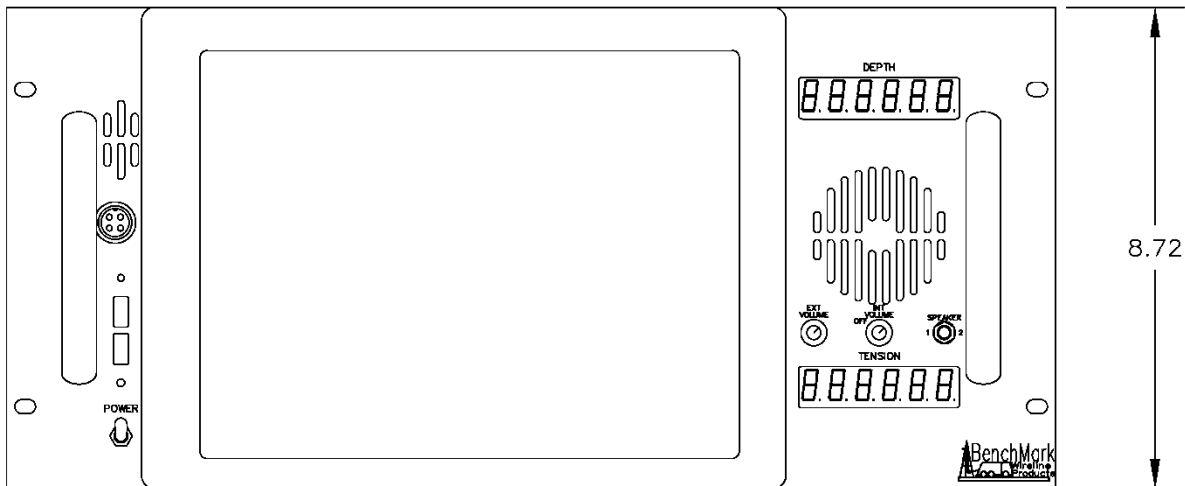
4.2.3 UPDATE 2K PART 3



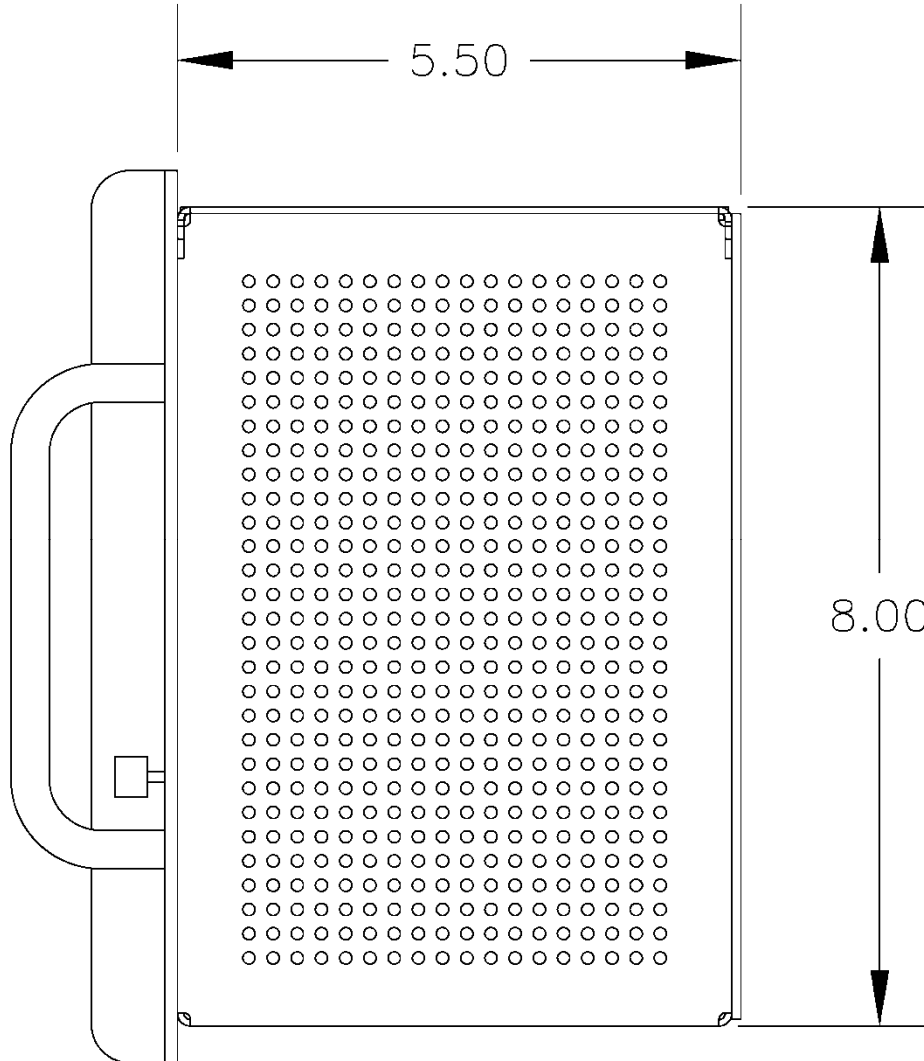
After receiving the above message from the utility proceed to the Hyperterminal 'Transfer' pull-down menu and choose 'Send Text File' and then pull-down 'Files Of Type' and choose 'All Files (*.*)' and then choose the latest revision hex file (hint: s344_2k_XX.hex).

5.0 MAINTENANCE, ASSEMBLY DRAWINGS & BOM

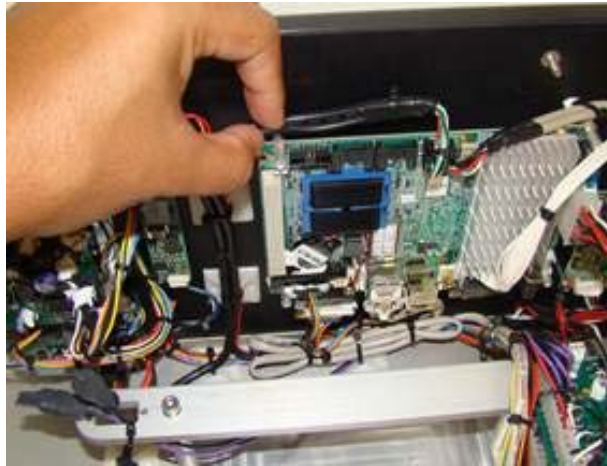
5.1 FRONT VIEW



5.2 SIDE VIEW



5.3 REPLACING INTERNAL FLASH CARD

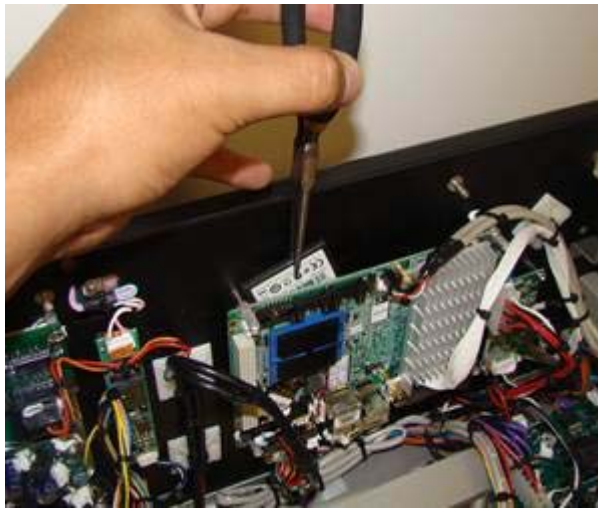


5.3.1 Locate the PC processor board mounted to the front panel. Remove zip tie from the top left corner. The card is on the back side of this board.

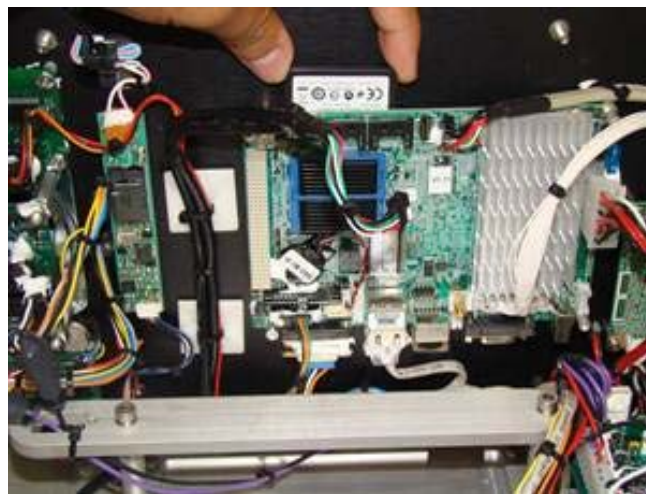


5.3.2 Using a pen or small screwdriver press the reject tab. The card will then pop out of the holder.

5.3 REPLACING INTERNAL FLASH CARD continued



5.3.3 The card can now be removed using small needle nose pliers.



5.3.4 To re-install a card place it in the slot, then press it in until you feel it latch into place. A small screwdriver or pen may be required to fully insert.

5.4 BOM – BILL OF MATERIALS

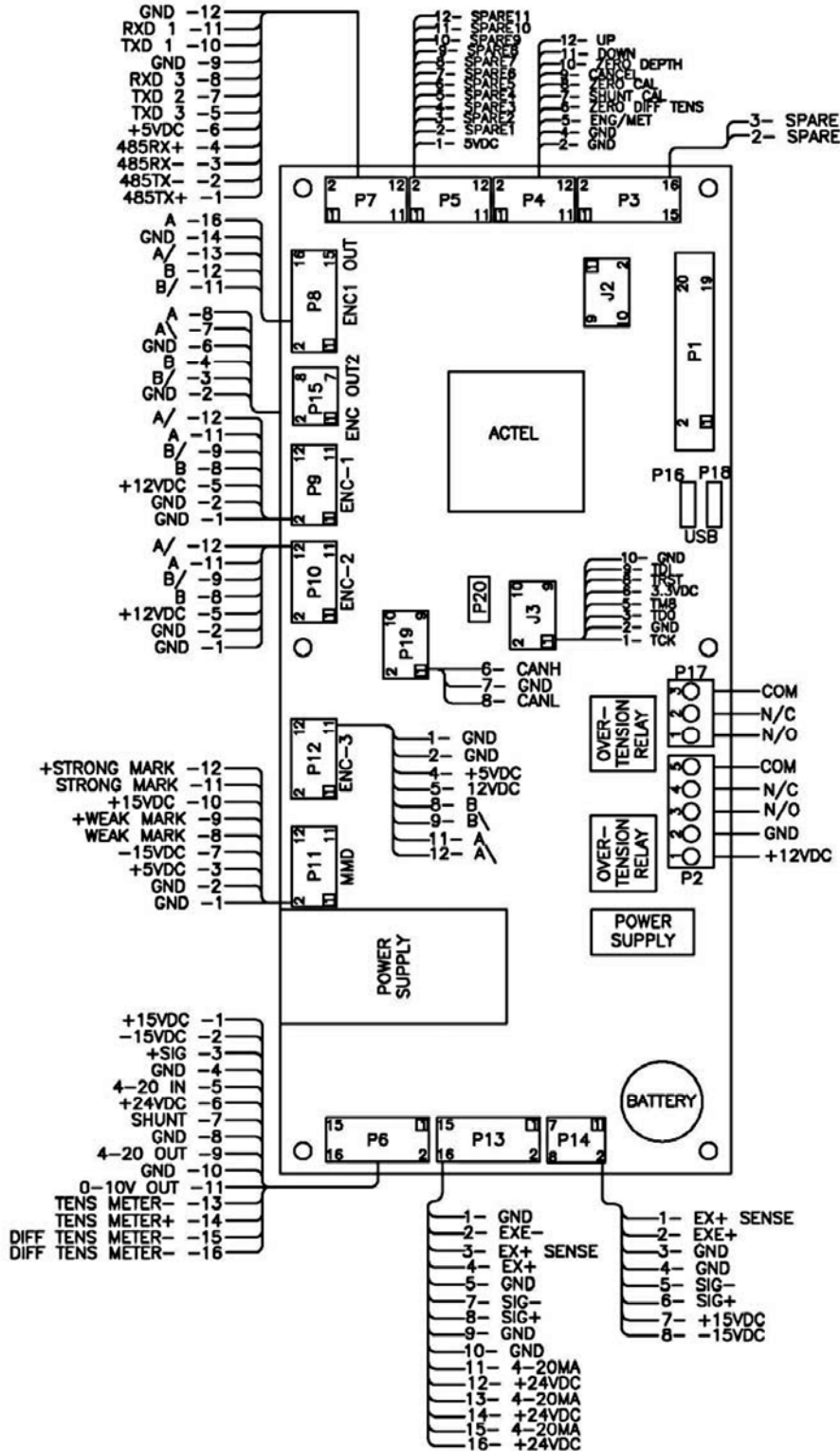
LINE	P/N	DESCRIPTION	QTY	REF
1	AM2KP134	PC BOARD AMS2K ACQUISITION	1	Nor
2	40100	LICENSE WINDOWS WIN7 EMBEDDED	1	Nor
3	AMS5P221	MEMORY COMPACT FLASH 8.0GB	2	Nor
5	AMS5P015	COMPUTER SINGLE BOARD 1.6GHZ 2GB RAM INTEL ATOM PROCESSOR	1	Nor
6	AMS4A373	CABLE ASSY ADVANTECH VIDEO 12.4" LCD DISPLAY	1	Nor
8	AMS4A577	LCD ASSY 12.1 USE AMS4K577 W/TOUCHSCREEN	0	Ref
9	AMS4P577	LCD 12.1 COLOR TFT SHARP BACKLIT 350 NITS	1	Nor
10	AMS4P513	SCREEN TOUCH RESISTIVE 12.1 4W	1	Nor
11	AMS4A549	PCB ASSY CONTROL LG TOUCH PNL	1	Nor
13	AMS4P128	DISPLAY LED RED 0.5" 14 SEGMNT SERIAL 2" x 3.5" 12 PIN HEADER	2	Nor
14	ACMU1P02	POWER SUPPLY 45W 12V 90-264VAC	1	Nor
15	AMS4A322	PCB ASSY VOLUME BRD	1	Nor
17	AMS4A644	PCB ASSY CCL/MMK BD AMS4A045	1	Nor
19	ALS3A034	PCB ASSY INTRCM 3" MONO W RLYS	1	Nor
22	AMS4P307	SONALERT SC616N MALLORY 4-16V 6-22mA	1	Nor
23	ALS1P032	SPEAKER ALNICO 8 OHM 2W 77MM	1	Nor
24	AMS4P252	BATTERY LEAD-ACID SEALED 12V 7.2AH .187 SPADE	0	Ref
26	AMS4M136	BEZEL LCD 12.1" LCD SHARP TUCH 5U OPERATOR PANEL	1	Nor
27	AMS4M095	CHASSIS 8-3/4 TOUCH SCRNM OH	1	Nor
28	AMS4M343	PANEL REAR 8-3/4 TOUCH SCRNM SL OP PANEL	1	Nor
29	AMS4M092	PANEL FRONT WINCH OP TOUCH SCR 8-3/4 X 19	1	Nor
30	AMS4M034	PANEL TOP TOUCH SCRNM OH OP PNL 8-3/4 X 19	1	Nor
31	AMS4M037	CLAMP BATTERY 12VDC TOUCH SCRNM	1	Nor
32	AMS4M057	TRAY BATTERY 12VDC TOUCH SCRNM	1	Nor
33	AMS4M039	STANDOFF BATTERY CLAMP 12VDC TOUCH SCREEN OH OP PNL 2.25 LG	2	Nor
34	AMS4M076	WINDOW LED RECESSED SERIAL DCI DISPLAY	2	Nor
35	AMS7M002	BRACKET SONALERT MOUNTING	1	Nor
36	ALS1P011	POT 250 OHM CLAROSTAT 381N250	1	Nor
37	AMS4P362	POT 500 OHM 1/4W CARB LNR W/SW	1	Nor
38	AMS4P363	KNOB INSTRUM SKIRTED RND .5"DI	2	Nor
39	AMS4A572 A	CABLE ASSY BACK LIGHT 12.4" DI	1	Nor
40	AMS5P076	MEMORY RAM 2GB DDR2 SODIMM NON-ECC 200 PIN ADVANTECH	1	Nor

5.4 BOM – BILL OF MATERIALS continued

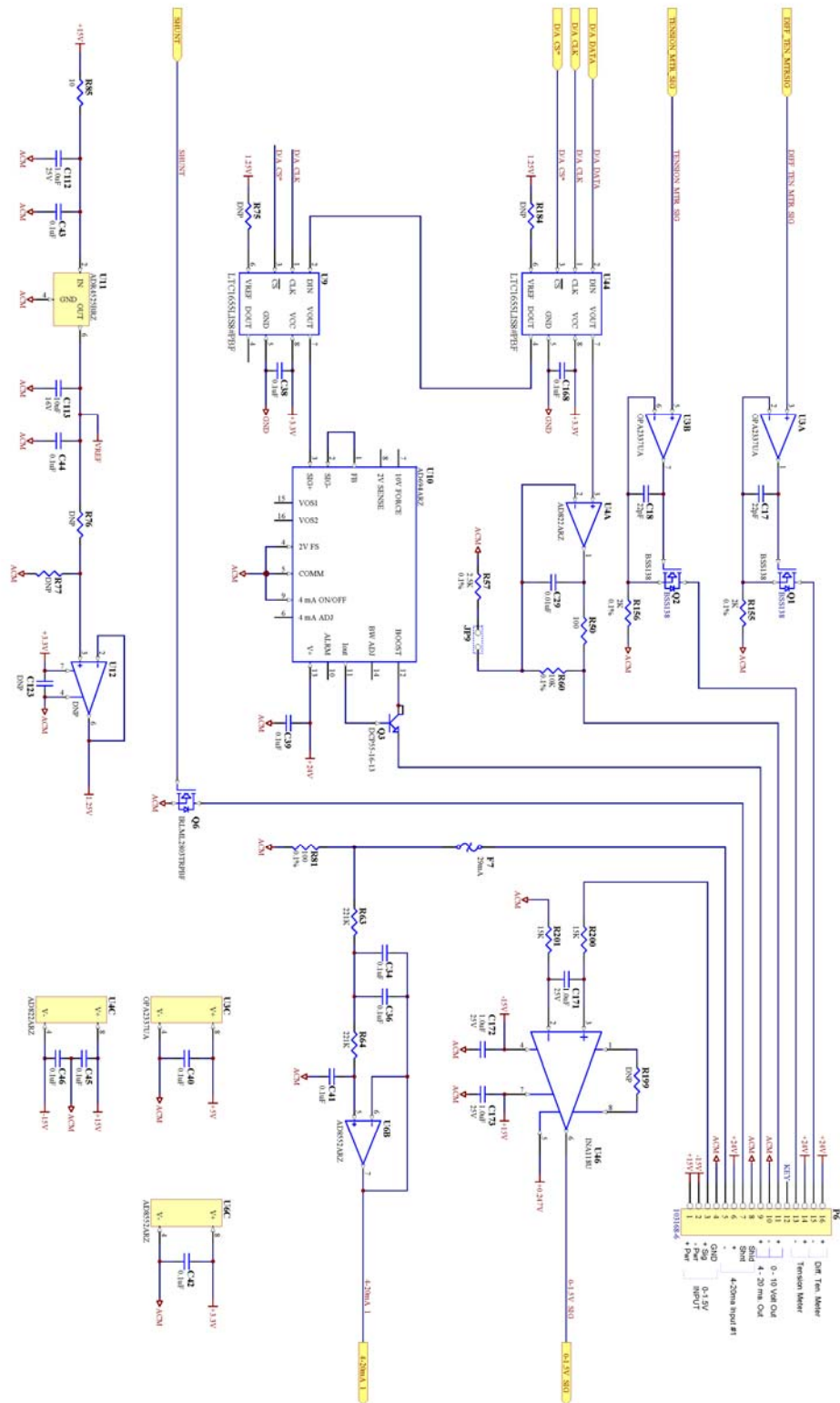
LINE	P/N	DESCRIPTION	QTY	REF
42	AMS7P028	SWITCH 4PDT TOGGLE LOCKING MTL-406N ALCO	1	Nor
44	AMS4P418	CONN MICROPHONE 4 PIN PNL MT	2	Nor
47	AMS4P290	TERMINAL INSULATED SOLDR 6-32	2	Nor
49	C276P155	CABLE BELDEN 177431 10' AC	1	Nor
56	AMS4P274	COUPLING RJ45F/RJ45F SHIELDED 90 DEG SNAP IN	1	Nor
57	AMS4P276	RECEPTACLE 115/240 VAC FUSED EMI FILTERED 2 AMP 6 AMP, GEN PURPOSE FILTERED 120V/240V, NO SWITCH, FLANGED	1	Nor
58	AMS4P691	FUSE 2.5A 250V 5MM X 20MM GMC MED TIME DELAY GLASS TUBE	2	Nor
59	AMS4P169	CONN KPSE02E12-3P RECEPT 12VDC POWER IN	1	Nor
60	AMS4P179	CONN KPSE02E12-3S RECEPTACLE 3 SOCKETS	3	Nor
70	AMS4P172	CONN KPSE02E14-12S RECEPTACLE 12 SOCKETS	2	Nor
71	AMS4P164	CONN DB9S CRIMP AMP USED WITH SOCKET 205090-1	1	Nor
72	AMS4P166	CONN DB25S CRIMP AMP USED WITH SOCKET 205090-1	1	Nor
75	AMS4P171	CONN KPSE02E12-10S RECEPTACLE 10 SOCKETS	1	Nor
77	AMS7P068	SCREW JACK D-CONNECTOR KEYSTONE E 7231	2	Nor
78	F244888000	HANDLE OVAL 1-1/2 X 4-9/16 AL	2	Nor
79	AMS4P198	SPACER UNTHREADED RND NYLON #4 5/16L x 3/16 OD (100/PK)	8	Nor
80	ALS3P018	STANDOFF 8-32 X 1 M/F HEX 8547.90.0010	4	Nor
81	AMS8P092	SCREW 6-32 X 3/8 FH PHIL SST	14	Nor
82	AMS7P037	STANDOFF 6-32 X 1-1/2 M/F HEX POWER SUPPLY	4	Nor
83	AMS4A571	CABLE ASSY 2 X USB PNL MT	1	Pht
84	AMS4P271	CONN KPSE02E12-8S RECEPTACLE 8 SOCKETS	1	Nor
90	AMS4P675	TAPE DBL SIDE 1/16 X 1 3M URETHANE	24	Nor
91	AMS4P590	KEYBOARD USB MINI TOUCH BLACK	1	Nor
94	FSU1P027	NUTPLATE SHELL 12 4-40 AMPHENOL	6	Nor
95	FSU1P028	NUTPLATE SHELL 14 4-40 AMPHENOL	2	Nor
96	AMS4P738	DUSTCAP PLUG CAPUSB-A 8536.69.4050	3	Nor
99	AMS4P028	SWITCH DPDT TOGGLE LOCKING ON-NONE-ON	1	Nor
100	AMS4P419	MICROPHONE CB COBRA HG-M73	1	Nor
101	AMS4P131	CLIP CB MICROPHONE	1	Nor
102	AMS5P202	COMPACT FLASH ADAPTER SATA ADDONICS ADSACFB	1	Nor
104	ALS4P011	STANDOFF 4-40 X 13/32 M/F HEX 3/16 NICKEL PL BRASS	3	Nor
105	AMS5P214	WASHER #8 FLAT NYLON INTERCOM PCB	8	Nor
106	AMS3A344-900	HARNESS WIRE AMS3A344 PANEL	1	Nor

6.0 SCHEMATICS, WIRING DIAGRAMS & WIRELIST

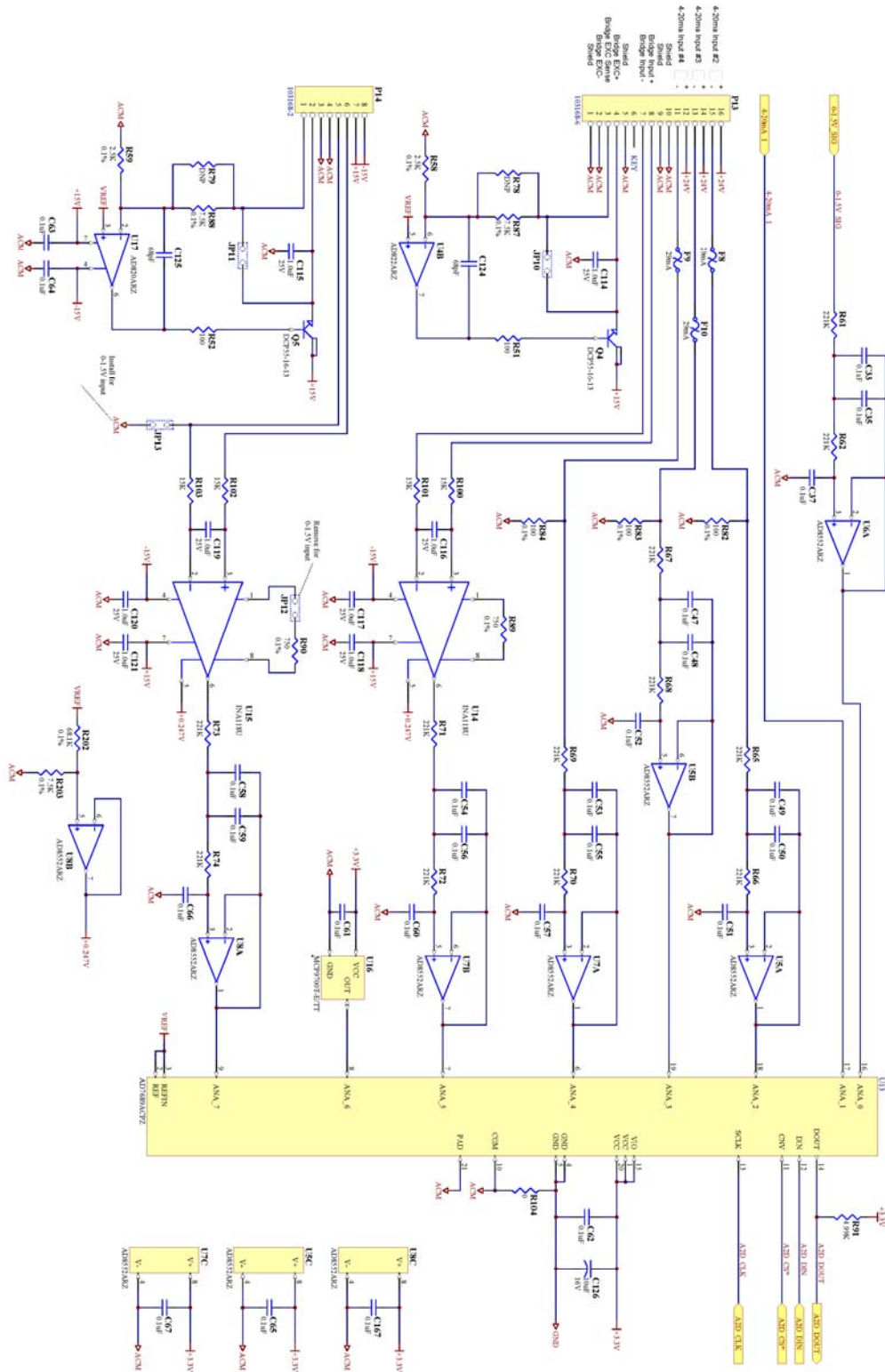
6.1 AM2KP134 ACQUISITION BOARD SCHEMATIC



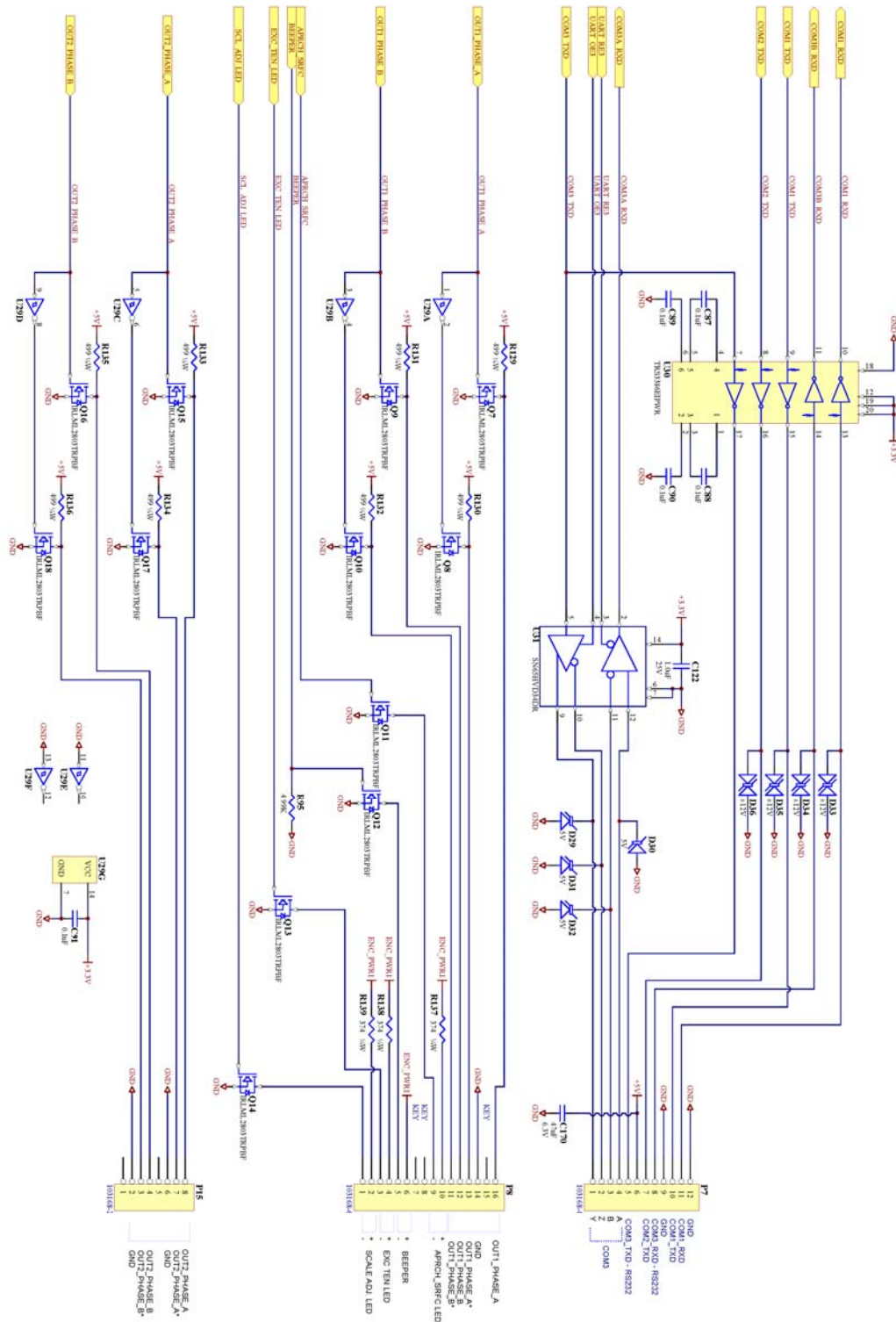
6.1 AM2KP134 ACQUISITION BOARD SCHEMATIC



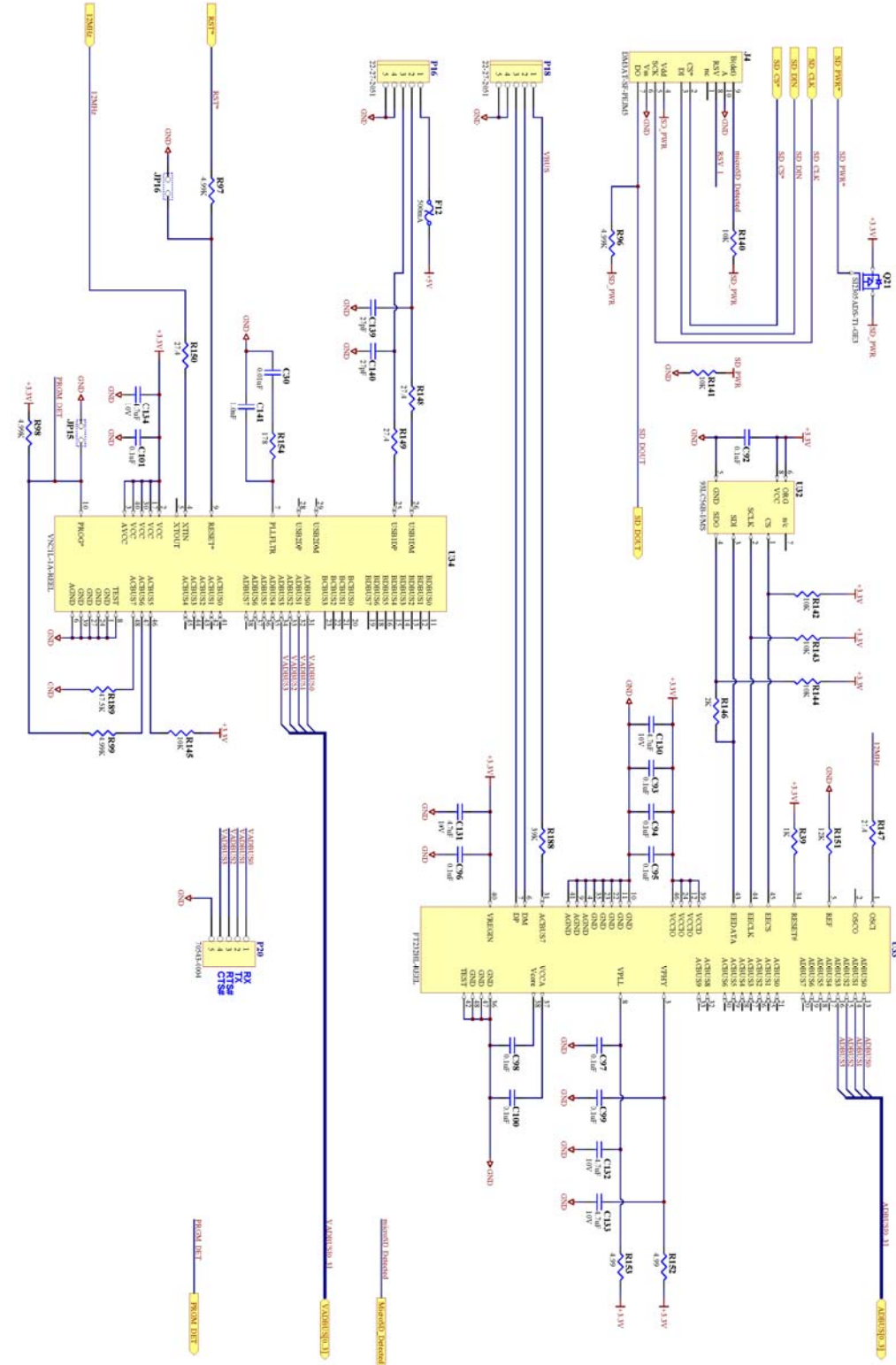
6.1 AM2KP134 ACQUISITION BOARD SCHEMATIC



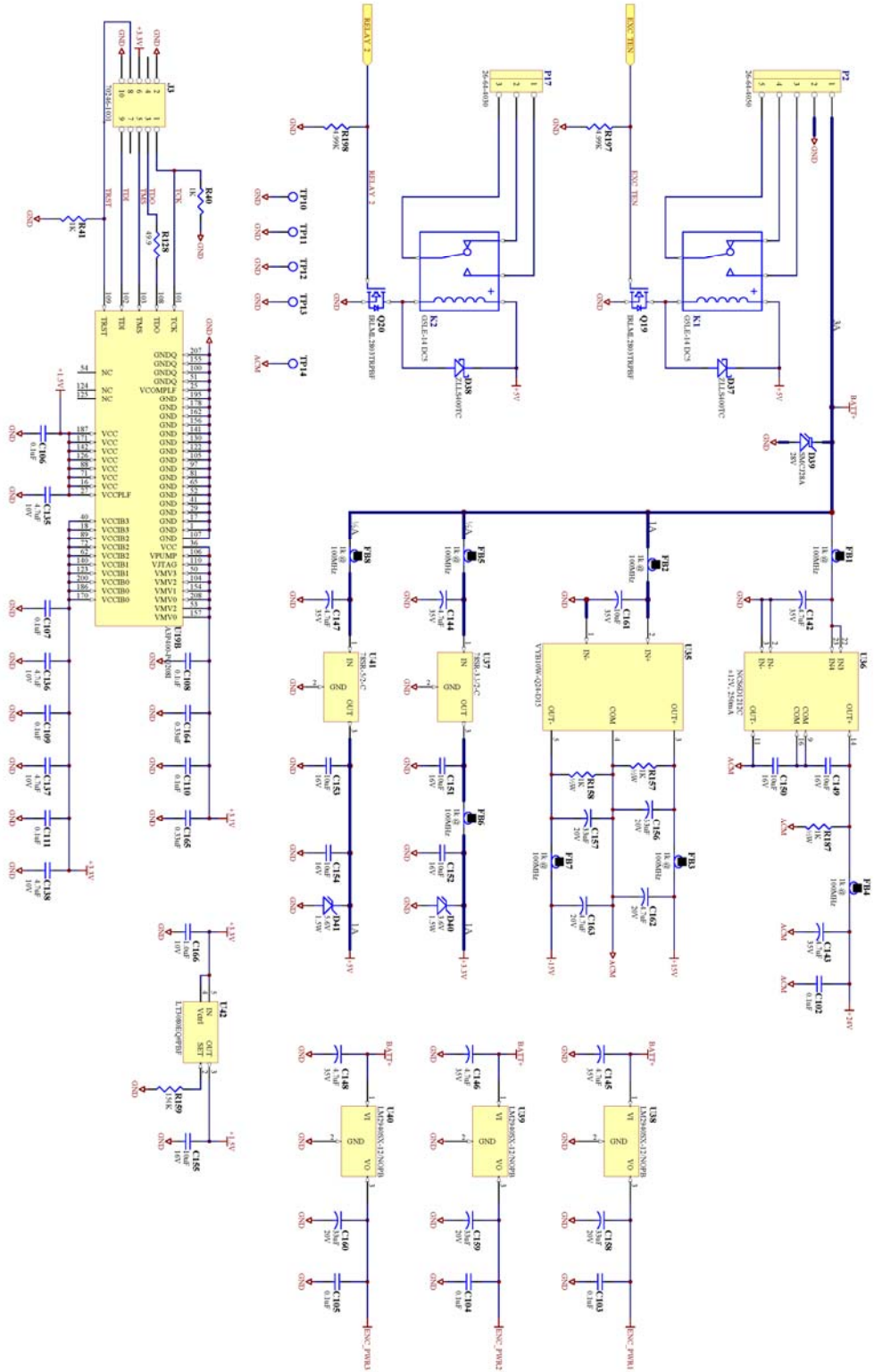
6.1 AM2KP134 ACQUISITION BOARD SCHEMATIC



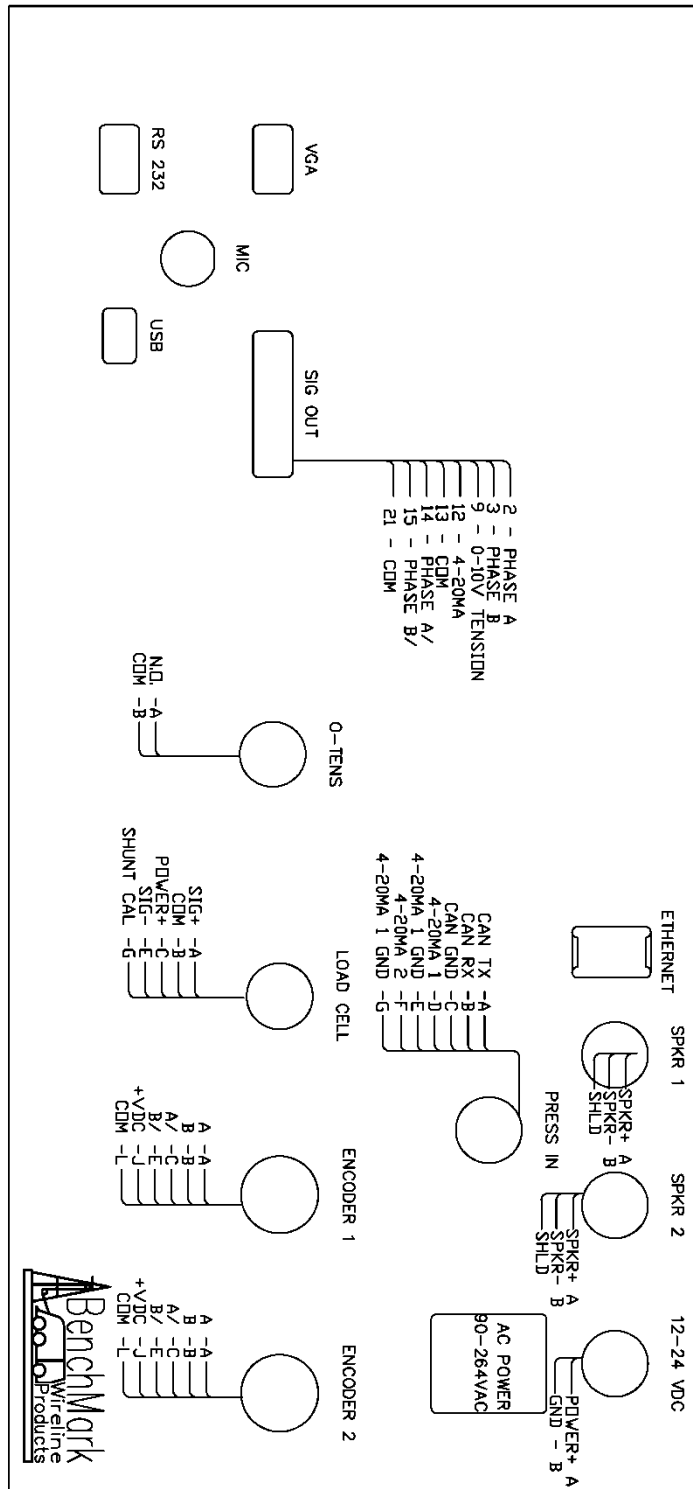
6.1 AM2KP134 ACQUISITION BOARD SCHEMATIC




6.1 AM2KP134 ACQUISITION BOARD SCHEMATIC



6.2 BACK PANEL CONNECTIONS



6.3 WIRELIST



BenchMark 36220 FM 1093
 P.O. Box 850
 Simonton, Texas 77476
 Phone: 281.346.4300
 Fax: 281.346.4300
 benchmarkwireline.com
Wireline Products

AMS3A344 WIRING LIST

REV A		KRD	2/13/2014	INITIAL RELEASE
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J1	12 - 24VDC, KPSE02E12-3P
J2	ENCODER 1, KPSE02E14-12S
J3	ENCODER 2, KPSE02E14-12S
J4	LOAD CELL, KPSE02E12-10S
J5	PRESSURE IN, KPSE02E12-8S
J6	RS232 IN, DB9
J7	SIGNAL OUT, DB25
J8	0 - TENS, KPSE02E12-3P
J10	SPEAKER 1, KPSE02E12-3S
J11	SPEAKER 2, KPSE02E12-3S
J12	ETHERNET
J13	USB
J14	AC POWER IN
J17	MICROPHONE CONNECTOR ON THE REAR PANEL
J18	MICROPHONE CONNECTOR ON THE FRONT PANEL
J19	VGA CONNECTOR, DB15
S3	POWER SWITCH
S2	SPEAKER 1, SPEAKER 2 SWITCH
VIR1	FRONT PANEL INTERNAL VOLUME KNOB
VER1	FRONT PANEL EXTERNAL VOLUME KNOB

5 PIN	P2 - POWER AND RELAY CONNECTIONS					
	FROM			TO		SIGNAL NAME
	P2 - 1	BATT +	RED	18/22/22	S3 - A1 NO (BOTTOM) P1 - 2 CCL/MMK PCB & VIR1 - 2	12-24VDC POWER
	P2 - 2	BATT -	BLK	18	BUS BAR	GND
	P2 - 3	CONTACT CLOSURE N.O.	BRN	20	J8 - A	TENSION CONTACT CLOSURE BACK PANEL
P2 - 5	CONTACT CLOSURE COM	GRN	20	J8 - B	TENSION CONTACT CLOSURE BACK PANEL	

16 PIN

P3 - SERIAL PROGRAM					
FROM				TO	SIGNAL NAME
P3 - 2		GRY	22	CN11 - 2 ADVANTECH PROCESSOR	RE-PROGRAM
P3 - 3		BLU	22	CN11 - 3 ADVANTECH PROCESSOR	RE-PROGRAM

16 PIN

P6 - ANALOG IN/OUT					
FROM				TO	SIGNAL NAME
P6 - 5	4-20MA INPUT #1	ORN	22	J5 - D ,PRESS IN CONNECTOR ON REAR PANEL	4-20MA LOOP 1
P6 - 6	+24VDC	WHT	22	J5 - H, PRESS IN CONNECTOR ON REAR PANEL	4-20MA LOOP POWER
P6 - 8	4-20MA INPUT #1 GND	BLK	22	J5 - E, PRESS IN CONNECTOR ON REAR PANEL	4-20MA 1 LOOP GND
P6 - 7	SHUNT CAL ENABLE	GRN	22	J4 - G	SHUNT CAL
P6 - 9	4 TO 20MA	BRN	22	J7 -12	4 TO 20MA OUTPUT TO SYSTEM
P6 - 10	GND	BLK	22	J7 - 21	GND
P6 - 11	0-10VDC OUT (TENSION)	GRY	22	J7 - 9	TENSION OUT+ TO SYSTEM
P6 - 13	TENSION METER DAC	GRN	22	P1 - 2 VOLUME PCB	DAC OUT TO SONALERT VOLUME PCB

12 PIN

P7 - COMMUNICATIONS - RS232					
FROM				TO	SIGNAL NAME
P7 - 5	COM3 TXD	GRY	22	J6 - 2	TXD TO REAR PANEL
P7 - 6	+5VDC	RED	22	D1 - 4, D2 - 4, J6 - 9	DCI DISPLAY POWER
P7 - 7	COM2 TXD	ORN	22	D1 - 5, D2 - 5	DISPLAY DATA - TWO WIRES CONNECTED TOGETHER
P7 - 8	COM3 RXD	BRN	22	J6 - 3	RXD TO REAR PANEL
P7 - 9	GND	BLK	22	D1 - 1, D2 - 1, J6 - 5	DISPLAY, RS232 GND
P7 - 10	COM1 TXD	BLU	22	ADVANTECH CN22 - 2 DB9	TO ADVANTECH COM1 GND FOR HOISTMAN TO AM2K PCB COMMUNICATIONS
P7 - 11	COM1 RXD	WHT	22	ADVANTECH CN22 - 3 DB9	TO ADVANTECH COM1 GND FOR HOISTMAN TO AM2K PCB COMMUNICATIONS
P7 - 12	GND	ORN	22	ADVANTECH CN22 - 5 DB9	TO ADVANTECH COM1 GND FOR HOISTMAN TO AM2K PCB COMMUNICATIONS

16 PIN

P8 - QUADRATURE OUT / INDICATORS

FROM				TO	SIGNAL NAME
P8 - 6	EXCESSIVE TENSION ALM +	ORN	22	P1 - 1 VOLUME PCB	BEEPER +12V POWER
P8 - 11	PHASE 1B\	WHT	22	J7 - 15	Quadrature Out - B\
P8 - 12	PHASE 1B	BLU	22	J7 - 3	Quadrature Out - B
P8 - 13	PHASE 1A\	ORN	22	J7 - 14	Quadrature Out - A\
P8 - 14	DCM	BLK	22	J7 - 13	ENCODER OUT GND
P8 - 16	PHASE 1A	BRN	22	J7 - 2	Quadrature Out - A

12 PIN

P9 - ENCODER 1

FROM				TO	SIGNAL NAME
P9 - 1	GND	BLK	22	J2 - L	ENCODER 1 GND
P9 - 4	+5VDC	RED	22	J2 - J	ENCODER 1 5VDC POWER
P9 - 8	ENCODER 1B	BLU	22	J2 - B	ENCODER 1 PHASE 1B INPUT
P9 - 9	ENCODER 1B\	GRN	22	J2 - E	ENCODER 1 PHASE 1B\ INPUT
P9 - 11	ENCODER 1A	ORN	22	J2 - A	ENCODER 1 PHASE 1A INPUT
P9 - 12	ENCODER 1A\	YEL	22	J2 - C	ENCODER 1 PHASE 1A\ INPUT

12 PIN

P10 - ENCODER 2

FROM				TO	SIGNAL NAME
P10 - 1	DCM	BLK	22	J3 - L	ENCODER 2 GND
P10 - 4	+5VDC	RED	22	J2 - J	ENCODER 2 5VDC POWER
P10 - 8	ENCODER 2B	BLU	22	J3 - B	ENCODER 2 PHASE 1B INPUT
P10 - 9	ENCODER 2B\	GRN	22	J3 - E	ENCODER 2 PHASE 1B\ INPUT
P10 - 11	ENCODER 2A	ORN	22	J3 - A	ENCODER 2 PHASE 1A INPUT
P10 - 12	ENCODER 2A\	RED	22	J3 - C	ENCODER 2 PHASE 1A\ INPUT

16 PIN

P13 - LOAD PIN EXCITATION VOLTAGE					
FROM				TO	SIGNAL NAME
P13 - 2	LOAD PIN EX-	BLK	22	J4 - B	LOAD PIN GND
P13 - 4	LOAD PIN EX+	RED	22	J4 - C	LOAD PIN 10VDC POWER
P13 - 7	LOAD PIN SIG-	BLK	22	J4 - E	LOAD PIN SIG-
P13 - 8	LOAD PIN SIG+	ORN	22	J4 - A	LOAD PIN SIG+
P13 - 9	4-20MA LOOP 2, GND	BLK	22/22/22	P13 -10, J5 - G, PRESS IN CONNECTOR ON REAR PANEL	4-20MA LOOP 2,GND
P13 - 15	4-20MA LOOP 2 INPUT	ORN	22	J5 - F,PRESS IN CONNECTOR ON REAR PANEL	4-20MA LOOP 2

5 PIN

P18 - USB COMMUNICATION TO PROCESSOR					
FROM				TO	SIGNAL NAME
P18 - 1	+5VDC	RED	22	CN20 USB CABLE TO FRONT PANEL PROCESSOR	USB +5VDC
P18 - 2	USB D+	WHT	22	CN20 USB CABLE TO FRONT PANEL PROCESSOR	USB D+
P18 - 3	USB D-	GRN	22	CN20 USB CABLE TO FRONT PANEL PROCESSOR	USB D-
P18 - 4	USB GND	BLK	22	CN20 USB CABLE TO FRONT PANEL PROCESSOR	USB GND
P18 - 5	USB GND	BLK	22	CN20 USB CABLE TO FRONT PANEL PROCESSOR	USB GND

10 PIN

P19 - CAN BUS					
FROM				TO	SIGNAL NAME
P19 - 6	CANH (TWIST WITH P19 - 8)	WHT	22	J5 - A	CAN BUS HIGH
P19 - 7	GND	BLK	22	J5 - C	CAN BUS GND
P19 - 8	CANL (TWIST WITH P19 - 6)	PUR	22	J5 - B	CAN BUS LOW

VOLUME PCB					
FROM				TO	SIGNAL NAME
P1 - 3	GND	BLK	22	BUS BAR	GND TO VOLUME PCB

16 PIN

CCL/MMK POWER DISTRIBUTION BOARD - P1					
FROM				TO	SIGNAL NAME
P1 - 1	GND	BLK	22	BUS BAR	GND
P1 - 10	TX1	GRN	22	CN17 - 3	ADVANTECH COM 2 TO CCL/MMK
P1 - 11	RX1	ORN	22	CN17 - 5	ADVANTECH COM 2 TO CCL/MMK
P1 - 12	GND	RED	22	CN17 - 9	ADVANTECH COM 2 TO CCL/MMK

J1 - CCL/MMK POWER DISTRIBUTION BOARD					
FROM				TO	SIGNAL NAME
J1 - 1	+5V_SYSTEM	RED	18/22	CN8 - 2, CN8 - 5, CN8 - 6, J2 - 1 SATA TO CF ADAPTER	PWR +5V FOR ADVANTECH CPU PCB
J1 - 2	GND	BLK	18	CN8 - 1, CN8 - 4, CN8 - 8	GND FOR ADVANTECH CPU
J1 - 3	12V_SYSTEM_POWER	PUR	18	S3 - B1 COM (MIDDLE)	12V SYSTEM PWR TO SWITCH
J1 - 4	GND	BLK	18	BUS BAR	RETURN
J1 - 5	PANEL BATTERY +	PUR	18	S3 - A4 NO (BOTTOM)	PWR +12V FROM JELL CELL THROUGH SWITCH
J1 - 9	SW_12v_SYSTEM	PUR	18	S3 - A3 NO (BOTTOM)	SWITCHED 12 VOLTS TO BOARD

TB1 - CCL/MMK POWER DISTRIBUTION BOARD					
FROM				TO	SIGNAL NAME
TB1 - 1	GND	BLK	20	BUS BAR	GND

P4 - CCL/MMK POWER DISTRIBUTION BOARD					
FROM				TO	SIGNAL NAME
P4 - 1	+12V	RED	20	CN2 - 1 INVERTER , CN2 - 2 INVERTER PCB, CN8 - 12	+12VDC
P4 - 2	SPLICE AT CN2 - 3	BLK	20	CN2 - 3 INVERTER PCB, CN2 - 4 INVERTER PCB, CN8 - 11	GND BUS BAR

J4 - CCL/MMK/POWER DISTRIBUTION BOARD					
FROM				TO	SIGNAL NAME
J4 - 1	+5V SENSE	RED	22	CN8 - 3	ADVANTECH PROCESSOR POWER CONNECTOR
J4 - 2	+5V GND	BLK	22	CN8 - 7	ADVANTECH PROCESSOR POWER CONNECTOR

J1 - 3 PIN DC POWER IN CONNECTOR ON REAR PANEL 12V POWER IN					
FROM				TO	SIGNAL NAME
J1 - A	12V POWER IN	VIO	20	S3 - B3 COM (MIDDLE)	12V POWER TO PANEL
J1 - B	GND	BLK	20	PWR_DIST/CCL PCB J1 - 10	TWISTED PAIR W/ ABOVE WIRE

J14 - AC POWER IN					
FROM				TO	SIGNAL NAME
J14 - L	P (AC LINE) IS MARKED ON TOP OF THE	BLU	18	S3 - B2 COM (MIDDLE)	TO POWER SWITCH AC LINE
J14 - N	N (AC NEUTRAL) IS MARKED ON TOP OF THE CONNECTOR	BRN	18	CN1 - N	TO POWER SUPPLY AC NEUTRAL
J14 -	GND	GRN	18	BUS BAR	RETURN
T+		PUR	18	S3 - B4 COM (MIDDLE)	TO POWER SWITCH
PNL_BA T-		BLK	18	PWR_DIST/CCL PCB J1 - 8	TWISTED PAIR W/ ABOVE WIRE

AC/DC POWER SUPPLY					
FROM				TO	SIGNAL NAME
CN1 - L	AC LINE	BLU	18	S3 - A2 NO (BOTTOM)	AC LINE PWR THROUGH SWITCH
CN2 - 3	+12V_ACPWR	PUR	18	PWR_DIST/CCL PCB J1 - 7	12V OUT OF POWER SUPPLY
CN2 - 4	GND	BLK	18	PWR_DIST/CCL PCB J1 - 6	12V RETURN TWISTED PAIR W/ ABOVE WIRE

16 PIN

INTERCOM PCB						
FROM				TO	SIGNAL NAME	
P1 - 1	+12V	WHT	22	VIR1 - 1	FRONT PANEL INTERNAL CONTROL KNOB	
P1 - 2	GND	BLK	22	GND BUS BAR	GND	
P1 - 3	SPLICE WIRES	WHT	22	J17 - 1, J18 - 1, VER1 - 3 CCW	GND	
P1 - 5	RIG SPEAKER OUT +	YEL	22	S2 - A2, VIR1 - 3CW	EXT SPEAKER SW, INTERNAL VOLUME	
P1 - 6	RIG SPEAKER OUT -	BLK	22	S2 - B2, VIR1 - 5CCW	EXT SPEAKER SW, INTERNAL VOLUME	
P1 - 7	PANEL SPEAKER+	YEL	22	PANEL SPEAKER+		
P1 - 8	PANEL SPEAKER-	BLK	22	PANEL SPEAKER-		
P1 - 10	EXT SPEAKER WIPER	YEL	22	VIR1 - 4W	EXT SPEAKER WIPER	
P1 - 11	MIC WIPER	BLU	22	VER1 - 2W	MIC WIPER	
P1 - 12	FRONT AND REAR PANEL MICROPHONE	GRN	22	J17 - 4, J18 - 4	MIC XMIT NC	
P1 - 13	FRONT AND REAR PANEL MICROPHONE	GRY	22	J17 - 3, J18 - 3	MICROPHONE XMIT NO	
P1 - 14	FRONT AND REAR PANEL MICROPHONE	BLK	22	J10 - C, J11 - C	GND	

S2 - SPEAKER 1 SPEAKER 2 SWITCH						
FROM				TO	SIGNAL NAME	
S2 - A1		BLU	22	J10 - A	SPEAKER 1, J10	
S2 - A3		YEL	22	J11 - A	SPEAKER 2, J11	
S2 - B1		VIO	22	J10 - B	SPEAKER 1, J10	
S2 - B3		ORN	22	J11 - B	SPEAKER 2, J11	

CN2 - ADVANTECH DUAL USB PORTS

FROM				TO	SIGNAL NAME
CN2 - 1	USB_A VCC	RED	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED SINGLE USB REAR PANEL
CN2 - 2	USB_B VCC	RED	22	TC CONTROLER	CABLE TO TOUCHSCREEN CONTROLLER
CN2 - 3	USB_A D0-	WHT	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED SINGLE USB REAR PANEL
CN2 - 4	USB_B D0-	WHT	22	TC CONTROLER	CABLE TO TOUCHSCREEN CONTROLLER
CN2 - 5	USB_A D0+	GRN	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED SINGLE USB REAR PANEL
CN2 - 6	USB_B D0+	GRN	22	TC CONTROLER	CABLE TO TOUCHSCREEN CONTROLLER
CN2 - 7	USB_A GND	BLK	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED SINGLE USB REAR PANEL
CN2 - 8	USB_B GND	BLK	22	TC CONTROLER	CABLE TO TOUCHSCREEN CONTROLLER

CN3 - ADVANTECH DUAL USB PORTS

FROM				TO	SIGNAL NAME
CN3 - 1	USB_A VCC	RED	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL
CN3 - 2	USB_B VCC	RED	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL
CN3 - 3	USB_A D0-	WHT	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL
CN3 - 4	USB_B D0-	WHT	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL
CN3 - 5	USB_A D0+	GRN	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL
CN3 - 6	USB_B D0+	GRN	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL
CN3 - 7	USB_A GND	BLK	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL
CN3 - 8	USB_B GND	BLK	22	MOLDED CABLE	2mm CONNECTOR TO MOLDED DUAL USB FRONT PANEL

J2 - SATA TO CF ADAPTER - REMOVE YELLOW WIRE FROM THE CONNECTOR

FROM				TO	SIGNAL NAME
J2 - 2		BLK	22	GND BUS BAR	GND
J2 - 3		BLK	22	GND BUS BAR	GND

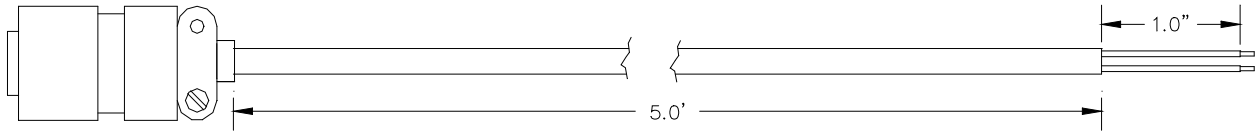
SATA TO CF ADAPTER GRAY CABLE					
FROM			TO		SIGNAL NAME
P2		GRY		CN4 ADVANTECH	SATA

J17 - MICROPHONE CONNECTOR REAR PANEL					
FROM			TO		SIGNAL NAME
J17 - 2	AUDIO OUT, MICROPHONE CONNECTOR ON REAR PANEL	WHT	22	J18 - 2, VER1 - 1CW	AUDIO OUT, MICROPHONE CONNECTOR ON FRONT PANEL

J12 ETHERNET				ADVANTECH	RJ45 CABLE W/CONNECTORS
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7.0 CABLES

7.1 AMS4A827 CABLE ASSEMBLY – DC POWER IN

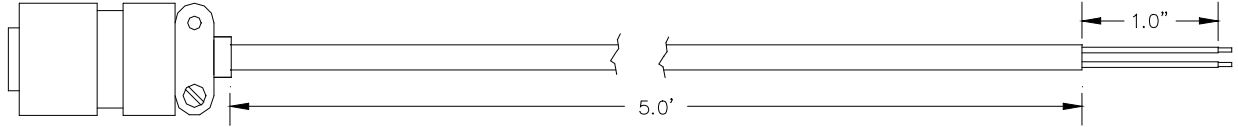


A – WHITE
 B – BLACK

A = +
 B = -

P/N	DESCRIPTION	QTY
AMS4P177	CONN KPSE06J12-3S STR PLUG SOCKET	1
AMS7P061	CABLE 16-2 SJ CORD	25

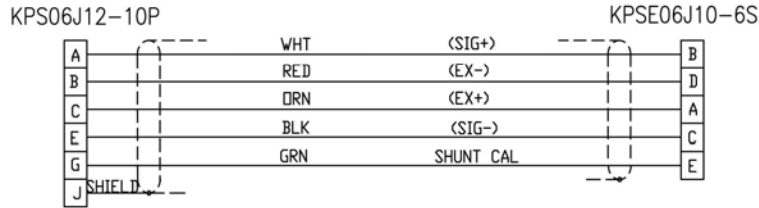
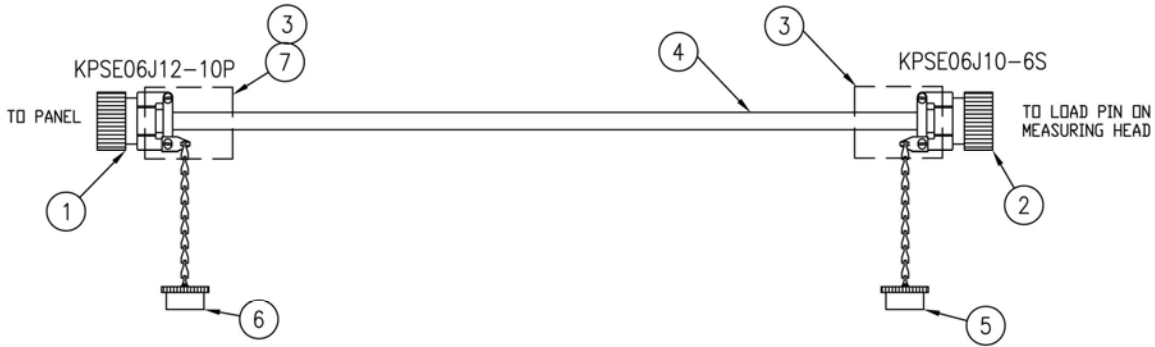
7.2 AMS4A826 CABLE ASSEMBLY – OVER TENSION SHUTDOWN



A – WHITE
 B – BLACK

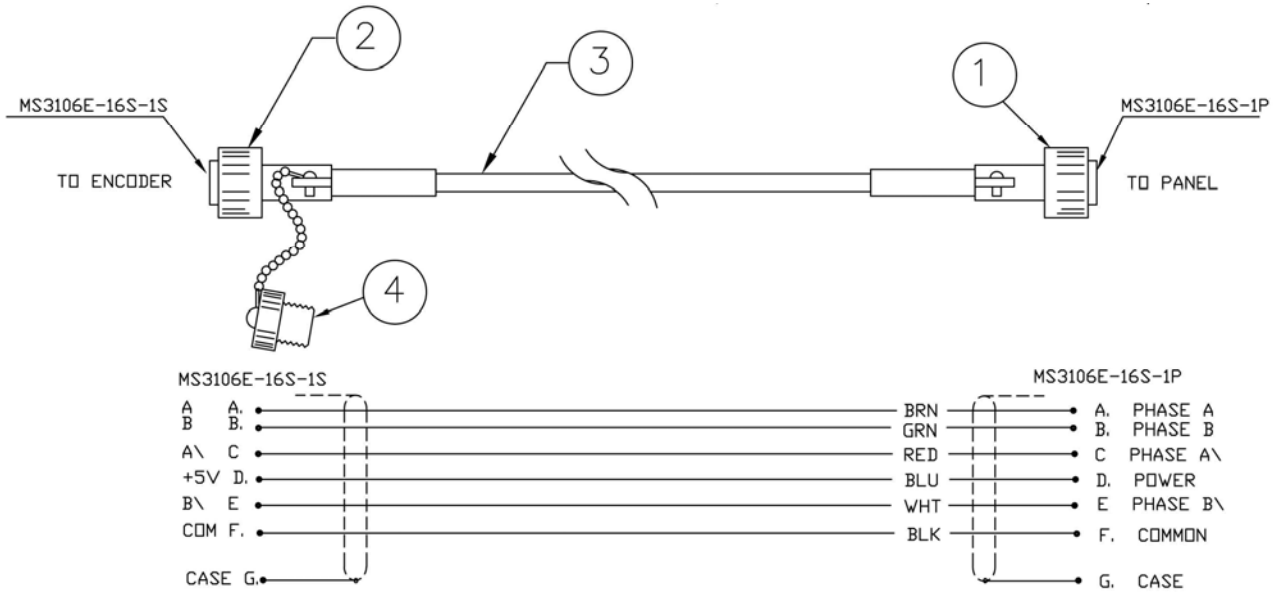
P/N	DESCRIPTION	QTY
AMS4P178	CONN KPSE06J12-3P STR PLUG PINS	1
AMS7P061	CABLE 16-2 SJ CORD	30

7.3 ALS8A013 LOAD PIN IN CABLE



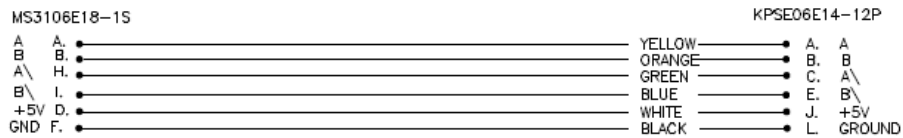
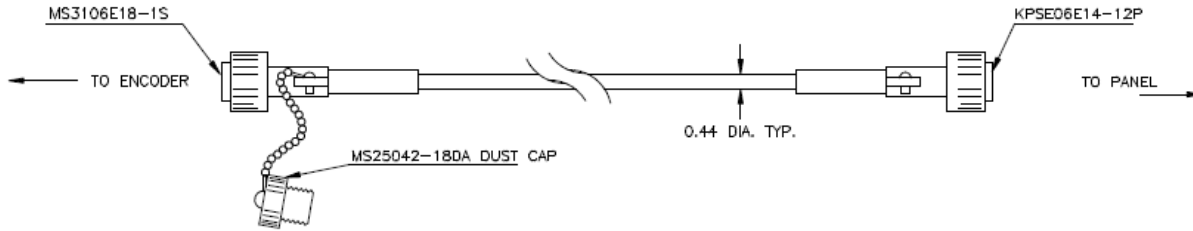
P/N	DESCRIPTION	QTY
AMS4P181	CONN KPSE06J12-10P	1
AMS4P266	CONN KPSE06J10-6S	1
AMS4P221	CABLE 20/8C ALPHA 25468 BLACK	30 FT
AM5KP059	DUST CAP KPT8010C	1
AM5KP070	DUST CAP KPT8012C	1

7.4 AMS4A127 ENCODER IN CABLE



P/N	DESCRIPTION	QTY
AMS4P183	CONN MS3106F-16S-1P	1
AMS4P184	CONN MS3106F-16S-1S	1
AMS4P221	CABLE 20/8C ALPHA 25468 BLACK	30 FT
AM5KP113	DUST CAP MS25042-16DA	1

7.5 AMS4A108B CABLE



P/N	DESCRIPTION	QTY	REF
AMS1P028	CONN MS3106F-18-1S ENCODER	1	
AMS4P182	CONN KPSE06J14-12P STR PLUG	1	
AMS4P221	CABLE 20/8C ALPHA 25468 BLACK	30 feet	
AMS1P029	DUST CAP MS25042-18DA	1	
AMS7P064	BUSHING #9779-513-8 AMPHENOL	1	
AMS7P063	BUSHING #9779-513-6 AMPHENOL	2	
ACMU1P88	TUBING SHRINK 1.00 ADH LINED	1	
AMS5P157	TUBING SHRINK 1.25 ADH LINED	1 foot	

7.6 AMS4A150A CABLE

