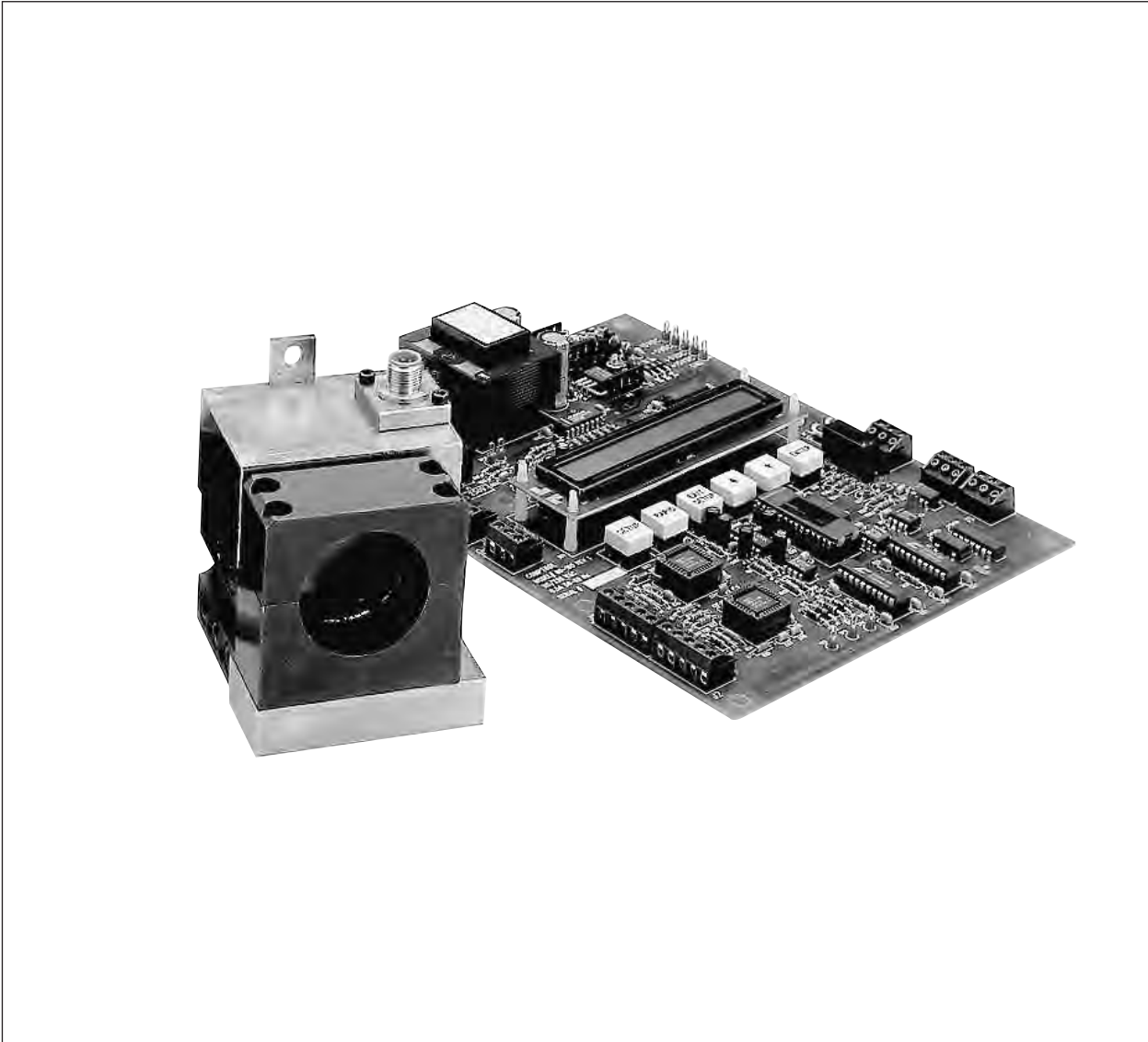


AC10 Measuring System

P-2012-2
819-0402

Installation Instructions



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⚠ WARNING Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

Introduction

This manual is intended for use by qualified personnel to assist them in the safe setup and operation of the Warner Electric AC10 Tension Measuring System. Warner Electric has made every effort to insure the accuracy and completeness of the information and recommends that all procedures be read and understood before performing them. Please contact Warner Electric with any questions regarding any information contained in this manual.

System Overview

The AC10 Tension Measuring System is designed to measure tension on continuous strip processing lines and equipment. The system consists of two AC10 Tensioncells, the PSAC10 power supply amplifier board, and two cables for connecting the Tensioncells to the board.

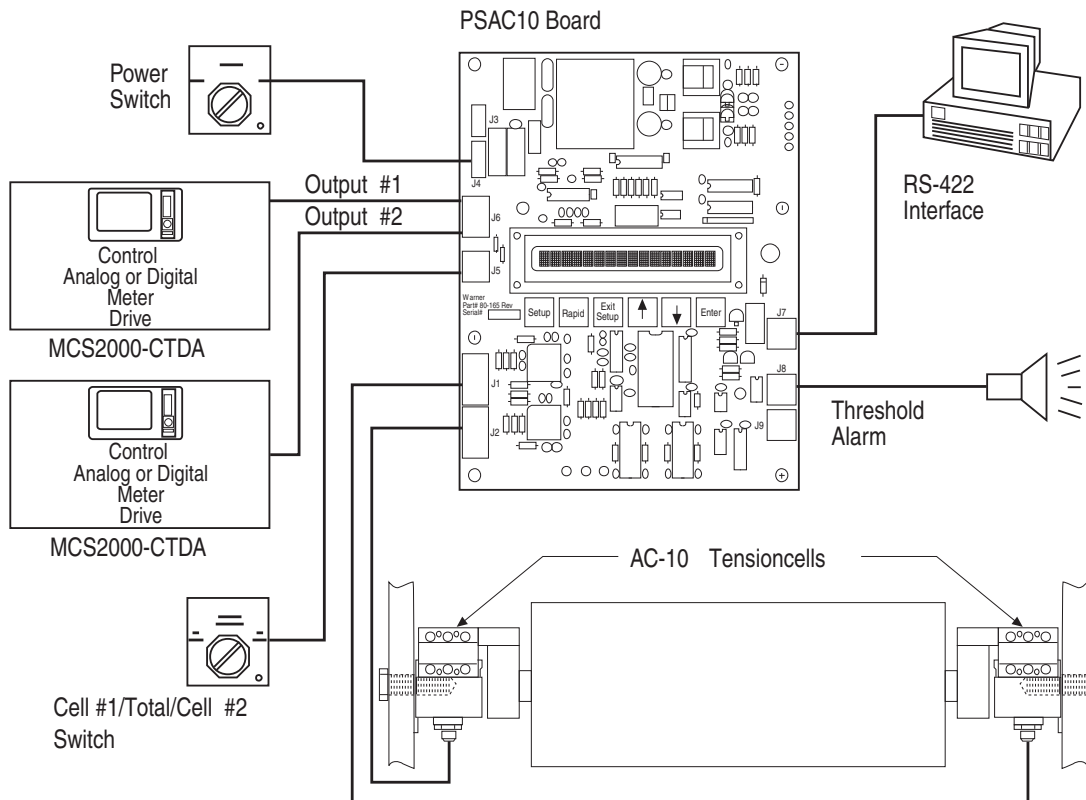
AC10 Tensioncells are mounted in pairs, one at each end of the measuring roll. During operation the Tensioncells continuously measure the mechanical tension force applied to the measuring roll. When the force is applied, the load plate deflects toward or away from the base block depending on the resultant force acting upon the Tensioncell. Deflection toward the base block is defined as the "Compression Mode." Deflection away from the base block is defined as the "Tension Mode." AC10 Tensioncells work equally well in either mode.

The mechanical deflection of the load plate is converted into an electrical output signal by the

AC Linear Variable Differential Transformer (LVDT). Displacement of the LVDT core caused by variations in web tension results in an output signal to the PSAC10 board directly proportional to the applied tension.

The analog outputs from the Tensioncells are converted into digital signals by the microprocessor-based electronics. The signals are conditioned, processed, and summed to produce two individually scaleable, -10 to +10 volt DC analog outputs to a tension indicator, drive or a MCS2000 CTDA control which can be used to monitor or control tension. The percent tension applied to each Tensioncell and the total tension are displayed on the board mounted 16-character liquid crystal display (LCD).

Terminals are also provided for connecting a user supplied On/Off power switch, 1-only 2-only switch, and RS-422 PC interface. A threshold alarm relay connection is also provided.



Note: When using the PSAC10 board, connect the outputs to the MCS2000 CTDA. There is no need to use the MCS2000 CTLC, because the signal is amplified and summed in the PSAC10.

AC10 Tensioncells

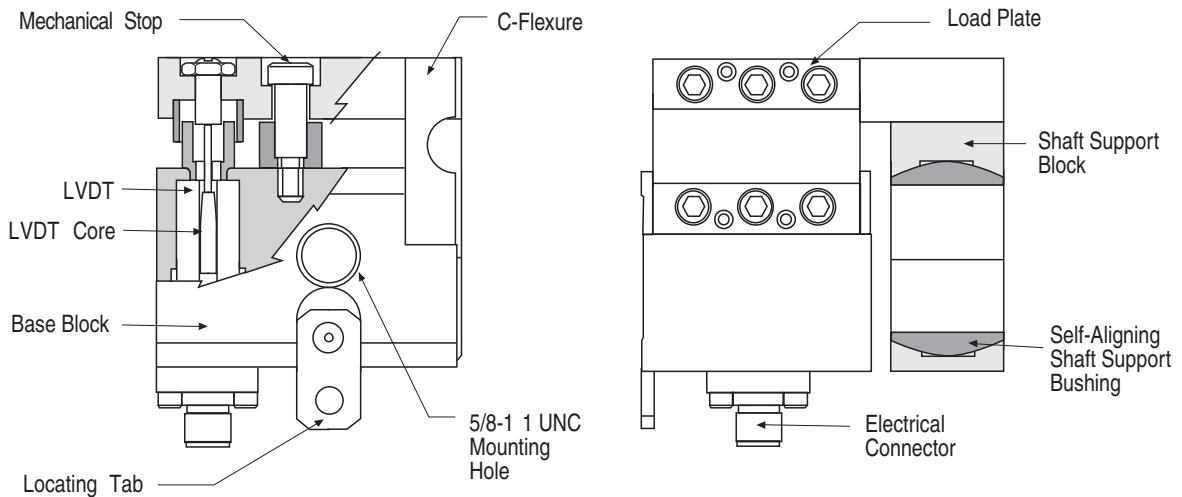
AC10 Tensioncells are available in three capacity ranges for non-rotating shaft applications with maximum resultant force plus tare load of 60, 170, or 500 pounds respectively.

The rugged, all-steel construction of the AC10 Tensioncell includes four basic components: the one-piece base block, the patented C-Flexure, the load plate, and the shaft support block. The factory-set mechanical stop provides overload protection up to ten times the maximum rated load capacity of the unit.

Each unit is wall mounted by means of a single bolt located in line with the integral self-aligning, stainless steel shaft support bushing and the

centerline of the roll shaft. This permits the Tensioncell to be rotated and mounted at the required angle around the axis of the measuring roll. The locating tab at the bottom of the unit locks it in position.

The primary conversion element between the mechanical tension force and the electrical output signal is an AC Linear Variable Differential Transformer (LVDT). The LVDT electrical elements are encapsulated and sealed against shock, vibration, or tampering. Input and output circuits are isolated from each other and from the Tensioncell body. This permits the Tensioncells to be used in floating ground electrical systems.



AC10 Electronics

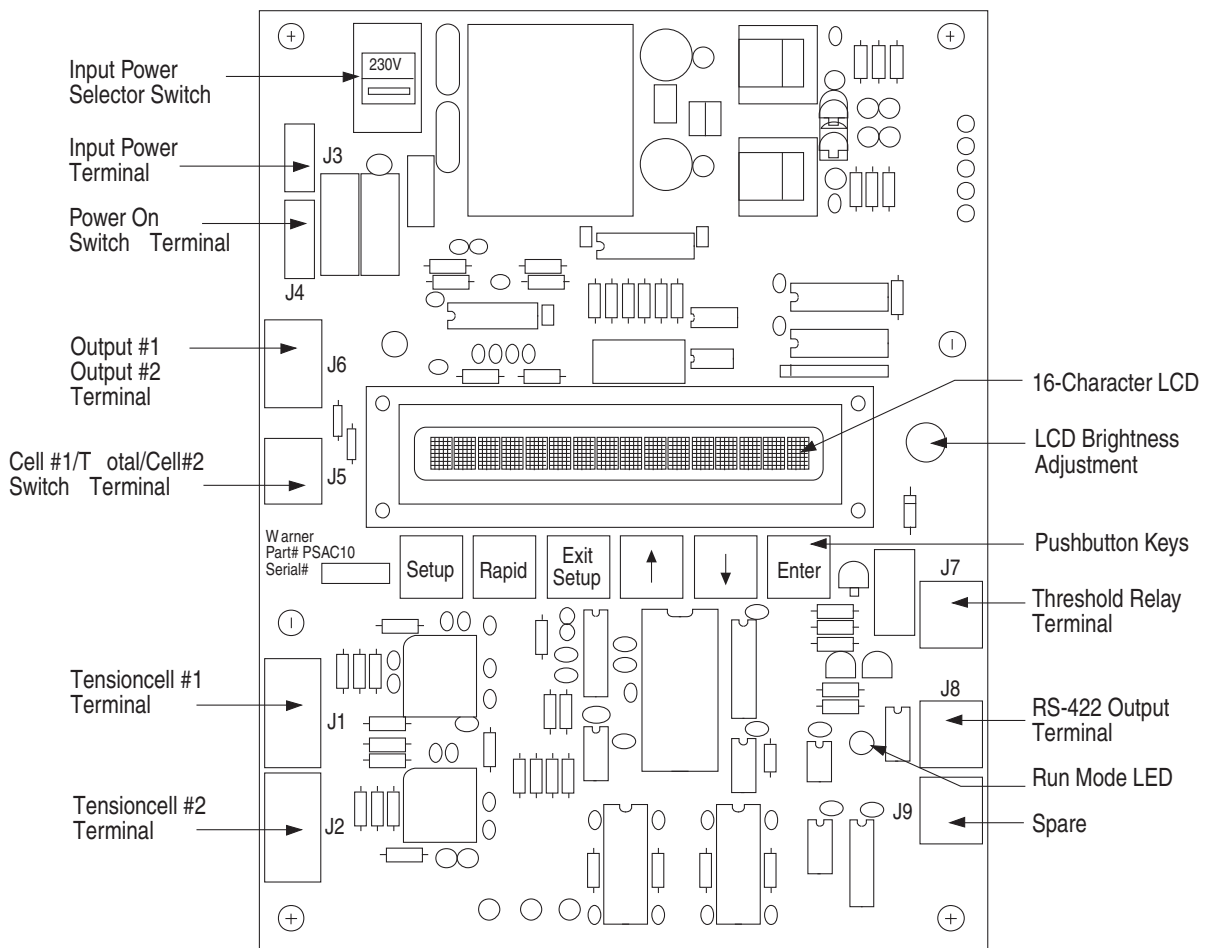
The AC10 microprocessor-based electronics adds ease of setup, versatility, and accuracy of the overall system by eliminating the need for potentiometers to adjust or setup the system. All adjustments and system settings are performed by using the pushbutton keys on the board. During setup, alphanumeric prompts are displayed on the 16-character LCD to guide the user through the setup procedure.

Other features of the PSAC10 board include:

- Two individually scaleable -10 to +10 volt DC outputs
- Run Mode LED

- Programmable threshold relay
- Cell#1/Total/Cell#2 switch connection
- LCD Brightness Adjustment
- Switch selectable 115/230 volt AC input power

An RS422 Serial Output terminal is also provided for interfacing the AC10 system with a PC to monitor and/or record the percent tension applied to each Tensioncell. Data is transferred in ASCII text format. The RS422 output can be converted to RS-232.



Specifications

AC10 Tensioncells

Dimensions (l x w x h) .....	.3.00" x 3.44" x 3.90"
Maximum Load Capacity (tension plus tare)	
AC10A .....	.60 pounds
AC10B .....	.170 pounds
AC10C .....	.500 pounds
Minimum Tension Load Required for Setup	
AC10A .....	.4 pounds
AC10B .....	.10 pounds
AC10C .....	.30 pounds
Standard Shaft Diameters (1/16" increments) .....	.1/2" to 1-1/2"
Overload Protection .....	.10 times maximum rated load of unit
Maximum Deflection at Full Load .....	.0.010"
LVDT	
Operating Temperature .....	.250°F maximum
Excitation Voltage .....	.15 Vrms @5KHz
Output .....	.3.2 volts AC/inch displacement / volt excitation
Excitation Resistance .....	.335 Ohms ±5%
Output Signal Resistance .....	.100 Ohms ±5%
Linearity .....	.0.1% of full scale
Hysteresis .....	.0.1% of full scale
Repeatability .....	.0.1% of full scale
Temperature Drift .....	.0.02% per °C

PSAC10 Power Supply/Amplifier Board

Dimension (l x w) .....	.8.75" x 6.88"
Maximum height of components above board .....	.1.5"
Operating Temperature Range .....	.32°F to +160°F (0°C to +70°C)
Input Voltage (switch selectable) .....	.115/230 VAC, 50-60 Hz, <1.0 Ampere
Output Voltage (two individually scaleable) .....	.-10 to +10 VDC
Maximum cable distance between Tensioncell and board .....	.100 feet
(The output load to the board must be 2 kΩ or greater)	
Threshold Relay Contact .....	.1A @ 24 VDC, 500mA@ 120 VAC, 250 mA @ 220 VAC
RS-422 Data Rate .....	.300bps, NP, 8, 1 stop bit

Pushbutton Key Functions

The six pushbutton keys on the PSAC10 board are used to enter and exit the Setup Mode and to make adjustments during the procedure. This section describes the various key functions and combinations that are used while setting up the system.



The UP arrow key is used to toggle between selections. It is also used to incrementally increase the output voltage each time the key is pressed. When the UP arrow and RAPID keys are pressed simultaneously, the voltage value will change continuously until the keys are released or the upper limit is reached. (See note below.)



The DOWN arrow key is used to toggle between selections and to incrementally decrease the output voltage each time the key is pressed. When the DOWN arrow and RAPID keys are pressed simultaneously, the voltage value will change continuously until the keys are released or the lower limit is reached. (See note below.)



The ENTER key is used to make selections and store values before proceeding to the next Setup step.



Pressing and releasing these keys simultaneously accesses the Setup Mode. An asterisk (*) will display next to the right tension value.



Press and release these keys simultaneously to start the Setup procedure when in the Setup Mode.



Press and release this key to exit the Setup Mode at any time. The system will return the settings entered during the last completed setup procedure.



Press and release these keys simultaneously to enter the settings for the Programmable Alarm Output.



Press and release these keys simultaneously to zero the system.

Note: During setup, the output voltage value will change approximately 5 millivolts each time the Up or Down arrow key is pressed and released. Pressing and releasing the RAPID key and the Up or Down arrow key simultaneously will change the value approximately 200 millivolts. Holding the Rapid key and an arrow key in, will continuously change the value until the keys are released.

Installation

Pre-Installation Inspection

Before installing the AC10 system:

- 1. Insure all components are present. A typical system consists of two AC10 Tensioncells, one PSAC10 board, and two 30 foot lengths of cable for connecting the Tensioncells to the board. Refer to Model Number Designation (Chart 1) below to verify load capacity and shaft diameter.
- 2. Inspect all electrical and mechanical components for physical damage.
- 3. Promptly report any damage to the carrier and Warner Electric.

Mechanical Installation – Tensioncells

AC10 Tensioncells are available in three capacity ranges. The rated load capacity should always be larger than the maximum calculated Tare Weight (W) plus the Resultant Force (RF).

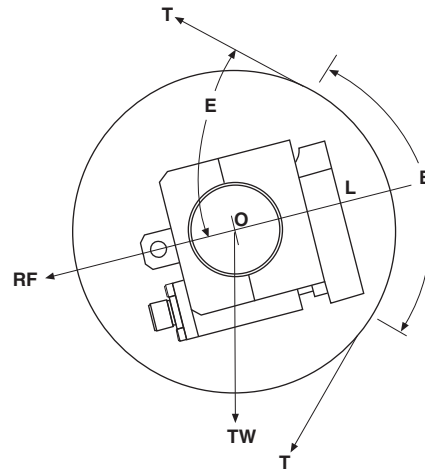
To calculate the Resultant Force:

1. $E = (180^\circ - B/2)$ where B = Wrap Angle
2. $RF = T \times \text{Cosine}E$ where T = Web Tension

The maximum rated load capacity must be greater than or equal to (RF + TW) where W = Tare Weight. The Web Resultant Force (RF) and Tare Weight are always summed. Refer to the Model Number Designation (Chart 1) below to verify the shaft diameter, and that the maximum rated load capacity of each unit.

Warner Electric also recommends the Resultant Force (RF) be greater than 1/3 the maximum load capacity of the Tensioncells.

Warner Electric side mount AC10 Tensioncells are shipped in pairs designated W1 and W2. The W1 unit has a split stainless steel, self-aligning bushing for clamping the measuring roll. The bushing in the W2 unit is not split to allow for shaft expansion.



Tensioncell Model Number Designation

Code	Max. Load Capacity (pounds)	Min. Tension Load for Setup (pounds)
A	60	4
B	170	10
C	500	30

Shaft Diameter			
08	1/2	13	13/16
09	9/16	14	7/8
10	5/8	15	15/16
11	11/16	16	1
12	3/4	17	1-1/16
		18	1-1/8
		19	1-3/16
		20	1-1/4
		21	1-5/16
		22	1-3/8
		23	1-7/16
		24	1-1/2

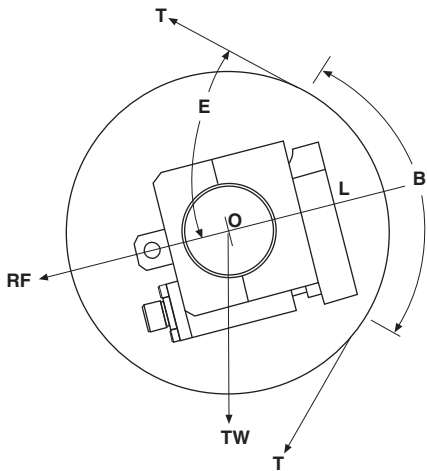
Support Bushing (AC10 only)	
W1 = Split bushing for clamping	
W2 = Solid bushing for expansion	

Example: AC10B18W1
 AC10 = Side Mount Tensioncell
 B = 170 pound capacity
 18 = 1-1/8 inch shaft diameter
 W1 = AC10 with split brushing

Chart 1

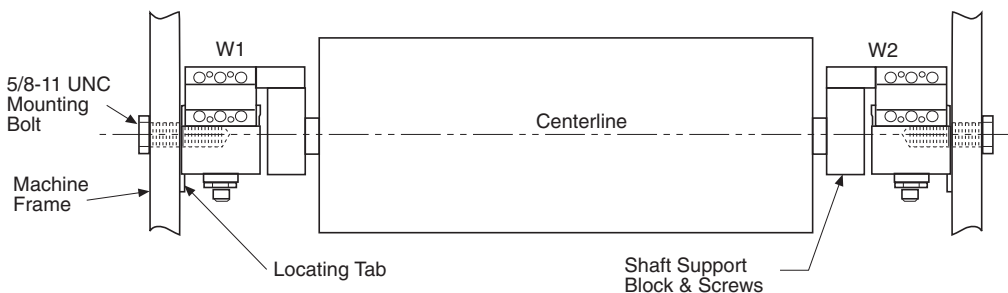
Before installing the Tensioncells, refer to machine drawings, or other documentation to determine the mounting angle. If the mounting angle is not specified, mount the Tensioncells so that the Tensioncell load line (OL) bisects the wrap angle and aligns with the Resultant Force (RF).

The Tensioncells are mounted to the machine frame with a 5/8-11 UNC bolt. The bolt is in line with the centerline of the shaft support bushing. This allows the Tensioncells to be rotated around the centerline of the roll so that the Tensioncell load line (OX) aligns with the Resultant Force (RF).



To install the Tensioncells:

- 1. Drill a 5/8" diameter hole through each side of the machine frame at the measuring roll location. The holes must be in line with each other and roll centerline to insure that the roll is level.
- 2. Fasten the Tensioncell to the machine frame with the 5/8-11 UNC mounting bolt.
- 3. Rotate the Tensioncell to the proper mounting angle and tighten the mounting bolt.



- 4. Drill a #6 (.204) hole concentric with the 1/4" hole in the locating tab.
- 5. Remove the Tensioncell to provide clearance to tap the hole for a 1/4-20 thread.
- 6. Repeat steps 2 through 5 for the Tensioncell for the other end of measuring roll shaft.
- 7. Loosen, but do not remove, the four screws in the bottom of the shaft support block enough to slide the Tensioncells on the roll shaft.

Note: The mounting angle must be the same for both Tensioncells and the Load Plate for both units must face in the same direction.

- 8. Position the roll with the Tensioncells in the machine and fasten them to the machine frame with the mounting bolts. Tighten the bolts enough to allow the Tensioncells to be rotated to the desired mounting angle.
- 9. Rotate the Tensioncells to align the locating tab with the 1/4-20 threaded hole. Lock the Tensioncells in position against the machine frame using a 1/4-20 x 1/2 socket head cap screw.
- 10. Tighten the mounting bolt on each unit.
- 11. Align the measuring roll so that there is no mechanical binding or friction.
- 12. Tighten the four screws in the bottom of each shaft support block.

Note: The mechanical stops are factory set to provide 1000% overload protection.

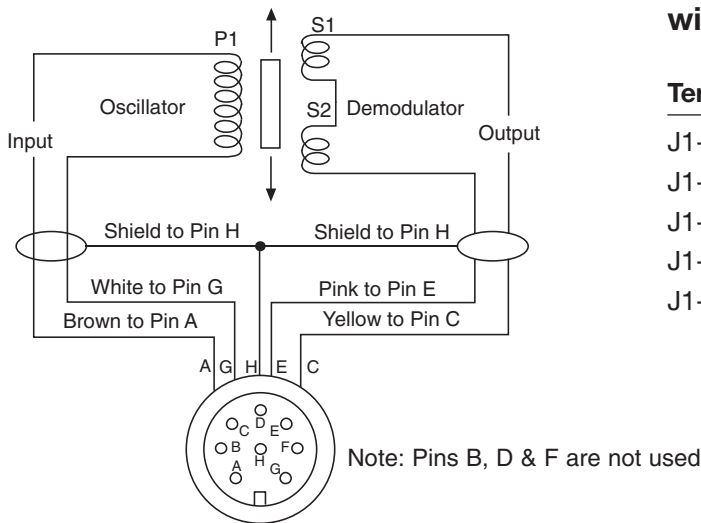
Electrical Installation

(Read the entire electrical installation procedure before proceeding.)

The PSAC10 Power Supply/Amplifier board should be securely mounted in a cabinet or enclosure using the mounting holes and standoffs INPUT provided. Refer to the dimension drawing on Page 19 for mounting hole locations.

Two 30 foot cables are provided for connecting the AC10 Tensioncells with the PSAC10 board. A screw-on connector is provided at one end of each cable for connecting to the AC10 Tensioncells.

Note: If the board must be located more than 30 feet away from the Tensioncells, the cable can be extended up to a total of 100 feet using Belden #8723 (or equivalent) in a grounded steel conduit.



Electrical Connections

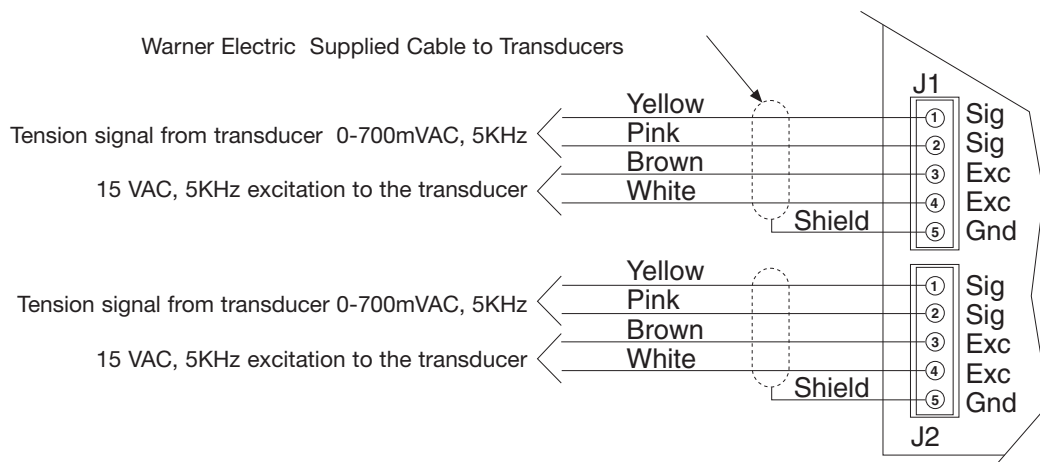
Although either Tensioncell in the system can be designated as Tensioncell #1 or #2, the following electrical connections assume the AC10 Tensioncell marked W1 is Tensioncell #1 and the Tensioncell marked W2 is Tensioncell #2.

Notes:

1. The wire color connections listed for J1 and J2 will differ if Belden #8723 (or equivalent) cable is required. Insure the correct wiring connections are made with respect to the connection made with the Warner Electric supplied cable.
2. The Warner Electric supplied cable/connector assembly is an eight conductor cable. However, only the yellow, pink, brown, and white and shield wires used.

J1 to W1 Tensioncell Terminal Connection with Warner Electric supplied cable

Terminal	Label	Description	Wire Color
J1-1	Sig	AC signal from LVDT	Yellow
J1-2	Sig	AC signal from LVDT	Pink
J1-3	Exc	Excitation to LVDT	Brown
J1-4	Exc	Excitation to LVDT	White
J1-5	Gnd	Shield	Shield

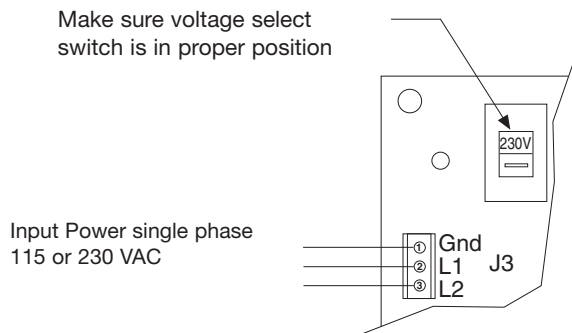


J2 to W2 Tensioncell Connection with Warner Electric supplied cable

Terminal	Label	Description	Wire Color
J2-1	Sig	AC signal from LVDT	Yellow
J2-2	Sig	AC signal from LVDT	Pink
J2-3	Exc	Excitation to LVDT	Brown
J2-4	Exc	Excitation to LVDT	White
J2-5	Gnd	Shield	Shield

J3 Input Power (115/230 VAC, 1-PH, 50/60 Hz)

Terminal	Label	Description	Wire Color
J3-1	Gnd	Ground	Green
J3-2	L1	L1 (230V) or Hot (115V)	Black
J3-3	L2	L2 (230V) or Neutral (115V)	White



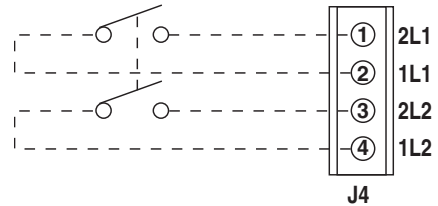
The input voltage selector switch must correspond to the voltage of the input power source.

J4 AC Power Switch and/or Power Indicator Terminal

J4 provides the terminal connection for an external AC Power Switch and/or power indicator. The indicator should not draw more than 40 milliamps of current. J4 may also be used to supply AC power to a digital voltmeter by connecting the meter between J4-2L1 and J4-2L2.

Note: If an ON-OFF switch is not used, jumpers must be installed from J4-2L1 to J4-1L1 and from J4-2L2 to J4-1L2 for proper operation.

Terminal	Label	Description
J4-1	2L1	(Switched) Line 1
J4-2	1L1	(Hot) Line 1
J4-3	2L2	(Switched) Line 2
J4-4	1L2	(Hot) Line 2

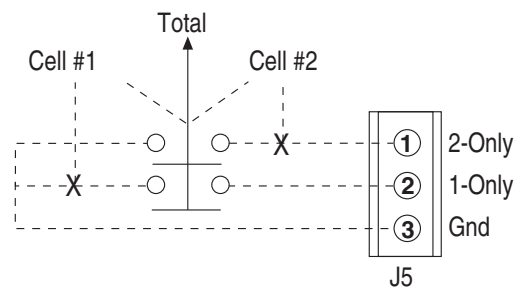


J5 Cell#1/Total/Cell#2 Switch Terminal (For Output #2 only)

J5 provides the connections for an external three-position switch with two normally open contacts. When used in conjunction with a remote meter, the switch allows the user to monitor total tension or the tension applied to either Tensioncell. The meter should be connected to Output #2 at J6, terminals Out2 and Gnd.

With the switch in the normally closed position, Output #2 will indicate the total tension. In the Cell#1 position, Output #2 switches to indicate the tension measured by the W1 Tensioncell. Changing to the Cell#2 position switches Output #2 to indicate the tension applied to the W2 Tensioncell.

Terminal	Label	Description
J5-1	2-Only	(Switched) tension W1
J5-2	1-Only	(Switched) tension W2
J5-3	Gnd	Ground

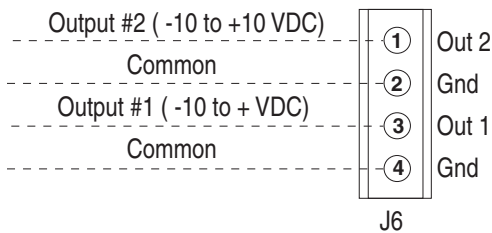


J6 Analog Outputs Terminal

The J6 terminal provides the connections for the two 10 volt DC outputs. Each output can provide up to 30 milliamp current.

During setup, each output is individually scaleable to meet the requirements needed to calibrate the indicator, drive, or control connected to the board. The board circuitry is designed to allow a switch to be connected at Terminal J5. This switch allows the user to monitor the Output #2 signal with respect to total tension, or the tension applied to either Tensioncell.

Terminal	Label	Description
J6-1	Out2	Scaleable -10 to +10 VDC Output
J6-2	Gnd	Common
J6-3	Out1	Scaleable -10 to +10 VDC Output
J6-4	Gnd	Common

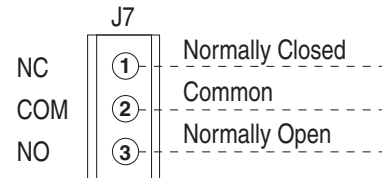


J7 Threshold Relay Terminal

J7 provides the connections for utilizing the AC10 Threshold Relay which is a form "C" dry relay contact, rated at 1 Amp. During setup, the threshold (percentage of total tension) is programmed to operate when the total tension is either above or below the threshold value.

The contact may be wired to function in either the normally open or normally closed state.

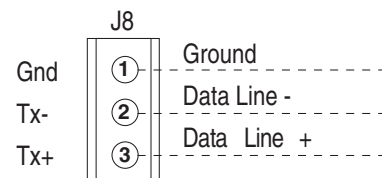
Terminal	Label	Description
J7-1	NC	Normally Closed Contact
J7-2	COM	Common
J7-3	NO	Normally Open Contact



J8 RS232 Output Terminal

J8 provides the cable connections for interfacing the PSAC 10 board with a PC to monitor total tension and tension applied to each Tensioncell. Data is transferred in ASCII text format.

Terminal	Label	Description
J8-1	Gnd	Ground
J8-2	Tx-	Data Line -
J8-3	Tx+	Data Line+



J9 (Spare)

Initial Electrical Checks

Before applying power:

Note: Make sure that the Input Power Selector Switch matches the available input voltage. Verify that the 8-position dip switch is set as follows:

Switch	1	2	3	4	5	6	7	8
Position	ON	ON	ON	ON	OFF	ON	ON	ON

Apply power.

The red Run Mode LED in the lower right hand corner of the board should be flashing.

AC10 Setup Procedure

Important: The input to any external device wired to J6-3 Out1 or J6-1 Out 2 must be 10 VDC or less.

The following procedure assumes a digital volt-meter will be used when measuring and setting the desired output voltages. If the outputs are connected to a digital or analog indicating device, which will be used during normal operation, these devices may be used during the setup procedure.

Note: The voltage setting for Output #1 at 100% load must be more positive than the voltage setting at 0% load. The same applies to the voltage settings for Output #2.

With power applied to the PSAC10 board, allow the system to "warmup" for 20 minutes or longer before proceeding with the setup procedure.

- 1. Press and release the SETUP and UP-ARROW keys simultaneously. An asterisk (*) will display next to the right tension value.

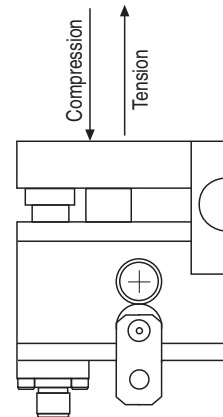
0%	0%	*0%
----	----	-----

- 2. Press and release SETUP & ENTER simultaneously to start the SETUP procedure.

Note: The Run Mode LED should stop flashing.

Compression Mode

- 3. Select either the COMPRESSION MODE or TENSION MODE using the UP or DOWN arrow key to toggle between the two choices.
 - a. Select the COMPRESSION MODE if the direction of the tension force is toward the base block.
 - b. Select TENSION MODE the direction on the tension force is away from the base block.



- 4. Press ENTER when the desired mode is displayed.

Steps 5 through 8 are performed with only the tare load applied on the Tensioncells.

Note: To exit the SETUP mode at anytime during the following procedure, press and release the EXIT key. The system will return to the settings entered during the last completed setup.

- 5.

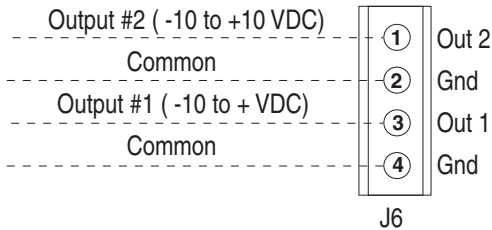
Apply Load	0%
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Insure that the Tensioncells are properly installed and the material is removed from the measuring roll.

- 6. Press ENTER.

7. **Adjust Out 1 0%**

- Connect a digital voltmeter between J6-3 Out 1 and J6-4 Gnd.
- Press the UP or DOWN arrow key (and RAPID key if necessary) until the desired no load output voltage is attained.
- Press ENTER.



8. **Adjust Out 2 0%**

- Connect a digital voltmeter between J6-1 Out 2 and J6-2 Gnd.
- Press the UP or DOWN arrow key (and RAPID key if necessary) until the desired no load output voltage is attained.
- Press ENTER.

Note: Steps 9 through 12 can be performed with 50% or 100% load applied when setting Output #1 and Output #2 voltage. Refer to the table at the right for minimum resultant load required for setup before proceeding.

9. **Apply Load 100%**

- Press the UP or DOWN arrow key to toggle between 50% or 100%. When desired percentage is displayed.

The illustrations at the right show two pull test methods. These tests are used to apply a load representative of the web tension. The load should be equal to the percentage of the full load selected (50% or 100%).

- Thread a non-stretchable rope over the center of the tension measuring roll simulating the web path.

Note: All rolls used in the pull test should be free running rolls.

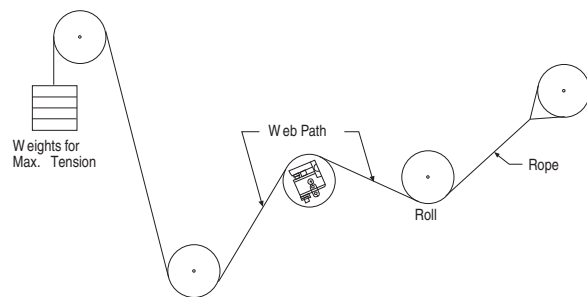
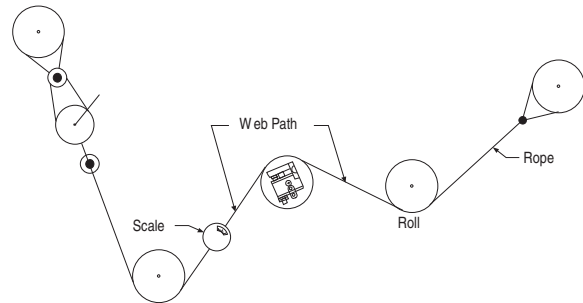
- With one end of the rope secured, hang a weight equal to the full load tension. (50% if selected)

A crane scale may be used to apply the required load.

- Press ENTER.

10. **Adjust Out 1 100%**

- Connect a digital voltmeter between J6-3 Out 1 and J6-4 Gnd.
- Press the UP or DOWN arrow key (and RAPID key if necessary) until the desired full load output voltage is attained.
- Press ENTER.



Model	Max Load Capacity (Pounds)	Min. Tension Load for Setup (Pounds)
ACIDA	60	4
ACIDB	170	10
ACIDC	500	30

Table 2

11. **Adjust Out 2 100%**

- a. Connect a digital voltmeter between J6-1 Out 2 and J6-2 Gnd.
- b. Press the UP or DOWN arrow key (and RAPID key if necessary) until the desired output voltage is attained.
- c. Press ENTER.

12. **Setup Complete**

- a. Press ENTER.

Programmable Threshold Relay

The Threshold Relay can be programmed to Close on Higher (if the total tension goes above) or Close on Lower (if the total tension goes below) a preset programmable threshold between 0% and 102% of the total tension. The dry relay contact is rated at 1 amp @ 24VDC, 250mA @ 220 VAC, or 500 mA @ 120 VAC.

A lamp may be connected between J7-3 NO (or J7-1 NC) and J7-3 COM during setup, start up, and/or normal operation to verify the relay is operating properly.

To set the threshold value:

- 1. Press the SETUP & RAPID keys simultaneously. The display will show a message indicating the current value of the threshold. The Run Mode LED will continue to flash.

Threshold 000%

- 2. Press the UP or DOWN arrow key until the desired threshold value is displayed.
- 3. Press ENTER to select the value.
- 4. Press the UP or DOWN arrow key to toggle between the CLOSE ON LOWER or CLOSE ON HIGHER prompt.

Close on Lower

- 5. Press ENTER to select the desired mode.

Note: The threshold may be set while the web machinery is in operation. Although the LCD will not be showing the tension, Output #1, Output #2, and the serial output will still be responding to tension changes.

If the threshold value or mode is reset with the equipment operating, the new value will take effect immediately.

Reset Tare to Zero

The tare value may be zeroed to compensate for any offsets accumulated during normal operation. Press the SETUP and EXIT keys simultaneously to reset the tare to zero.

Note: Resetting tare to zero must be done with no tension load applied.

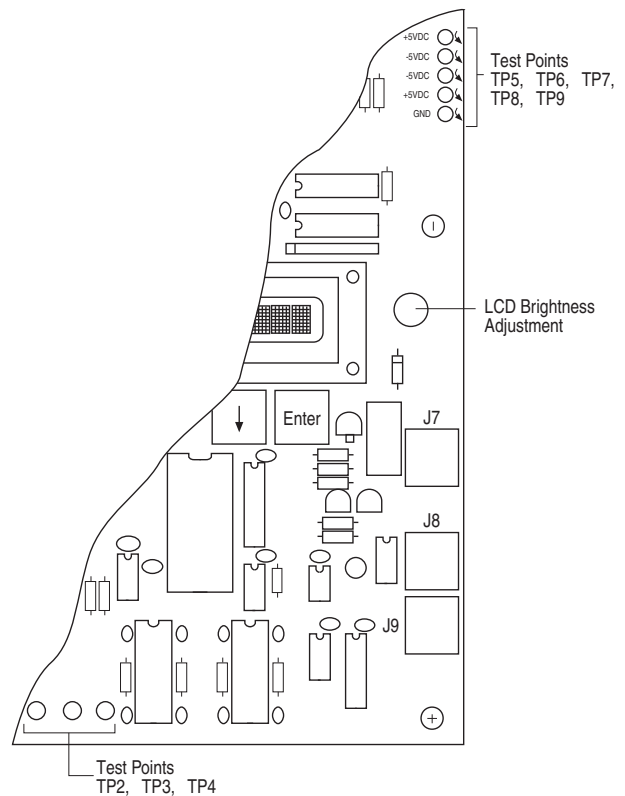
Troubleshooting

When properly installed in accordance with the design specification and procedures outlined in this manual, the AC10 Tension Measuring System should require little or no regular maintenance or service. Certain conditions, however, can impair the accuracy, reliability, and performance of the system. The following are some conditions to consider which may effect the mechanical and/or electrical components of the system.

1. Have the system operating parameters changed?
 - a. Has the web tension changed?
 - b. Does the tension plus tare load exceed the maximum rated load capacity of the unit?
 - c. Has the Wrap Angle changed?
2. Are the Tensioncells mounted correctly and securely?
3. Is the tension measuring roll properly aligned and does it turn freely?
4. Is the line voltage present and the on-board Input Power Selector Switch in the correct position?
5. Is an external power switch connected and operating correctly? If an external switch is not used, are the jumpers properly installed at J4? See page 11.
6. Are all fuses and/or circuit breakers installed and functional? There are two 250V, 500mA fuses on the board.
7. Is the Run Mode Indicator LED flashing? If not, check if the system is in Setup mode.
8. Is the on-board display lit? Check LCD Brightness Adjustment.

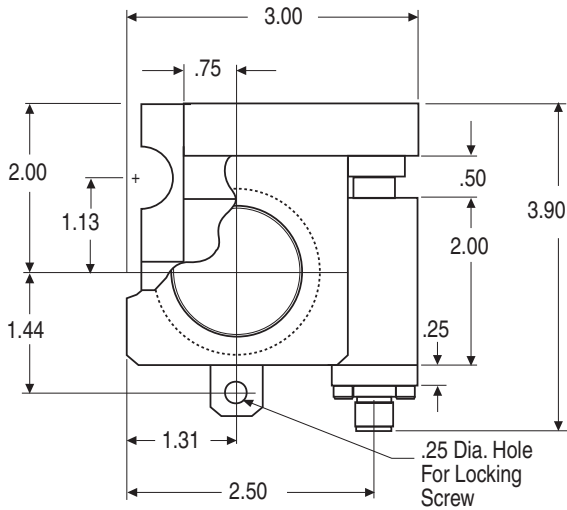
9. Verify the following voltages.

TP3 to TP7	+10 volts DC
TP4 to TP7	+2.5 volts DC
TP5 to TP7	+15 volts DC
TP6 to TP7	+5volts DC
TP8 to TP7	-5 volts DC
TP9 to TP7	-15 volts DC
10. Are outputs responding to tension changes? Check connections and voltages at J1, J2, and J6.
11. Does the output signal(s) from the board meet the voltage requirements for the device(s) connected to it?
12. Is the Excitation Voltage to the LVDTs correct?

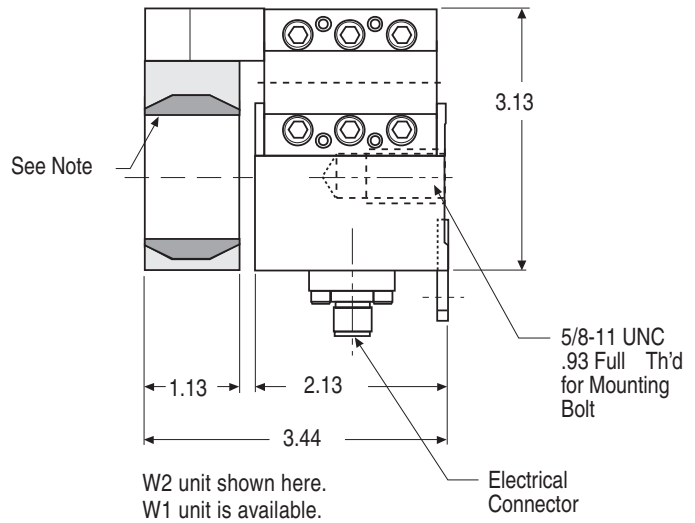


- a. Using an AC volt meter with at least 5Khz band width, measure the voltage between J1-3 Exc and J1-4 Exc. The meter should read 15Vrms ~ 5Khz \pm 5%. If excitation voltage is low, turn off power to the board and remove the J1 connector. Turn power back on and recheck. If voltage is correct, check for a short in Tensioncell cable assembly. Repeat test for Cell #2 at J2.
 - b. With board power off, remove the J1 connector and measure the resistance between the Yellow (J1-1 Sig) and Pink (J1-2 Sig) wire terminals. The resistance reading should be 335 ohms \pm 5%. The resistance between White (J1-3 Exc) and Brown (J1-4 Exc) wire terminals should be 100 ohms \pm 5%. If readings are incorrect, disconnect cable at the Tensioncell designated as Cell #1, and check resistance between pins C and E, and A and G. Repeat test for Cell #2 at J2.
13. Does the system zero? Press the SETUP and EXIT keys simultaneously.
14. Does repeating Setup procedure help?
15. If problem(s) persists, contact your local Warner Electric Representative or the factory.

AC10 Tensioncell Dimensional Drawings



Note: Stainless steel self-aligning bushing provided for 1/2" to 1-1/2" diameter shafts in 1/16" increments.



(Specifications and dimensions subject to change without notice.)

Tensioncell Model Number Designation

A C 10 B 16 W 1

Code	Max.Load Capacity (pounds)	Min.Tension Load for Setup (pounds)
A	60	4
B	170	10
C	500	30

Support Bushing (AC10 only)

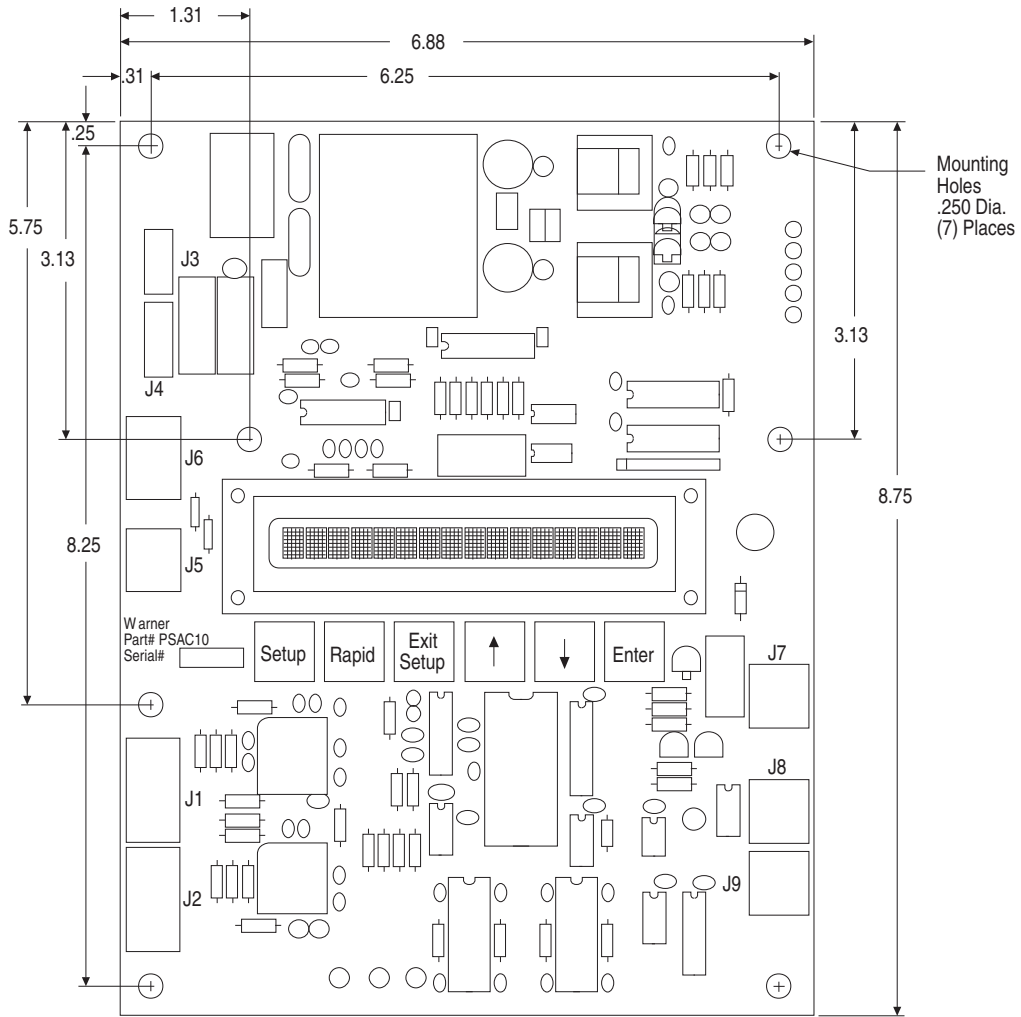
W1 = Split bushing for clamping
 W2 = Solid bushing for expansion
 S = System, which includes one "W1" cell, one "W2" cell, two 30 ft cables and a PSAC10 board.

Examine: AC10B16W1
 AC10 = Side Mount Tensioncell
 B = 170 pound capacity
 16 = 1 inch shaft diameter
 W1 = AC10 with split bushing

Shaft Diameter	
12	3/4
16	1
20	1-1/4
23	1-7/16

Note: Other shaft diameters are available.

PSAC10 Board Dimensions



Specifications and dimensions subject to change without notice.

Warranty

Warner Electric LLC warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of one (1) year from the date of original purchase for consumer, commercial or industrial use.

This warranty extends only to the original purchaser and is not transferable or assignable without Warner Electric LLC's prior consent.

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