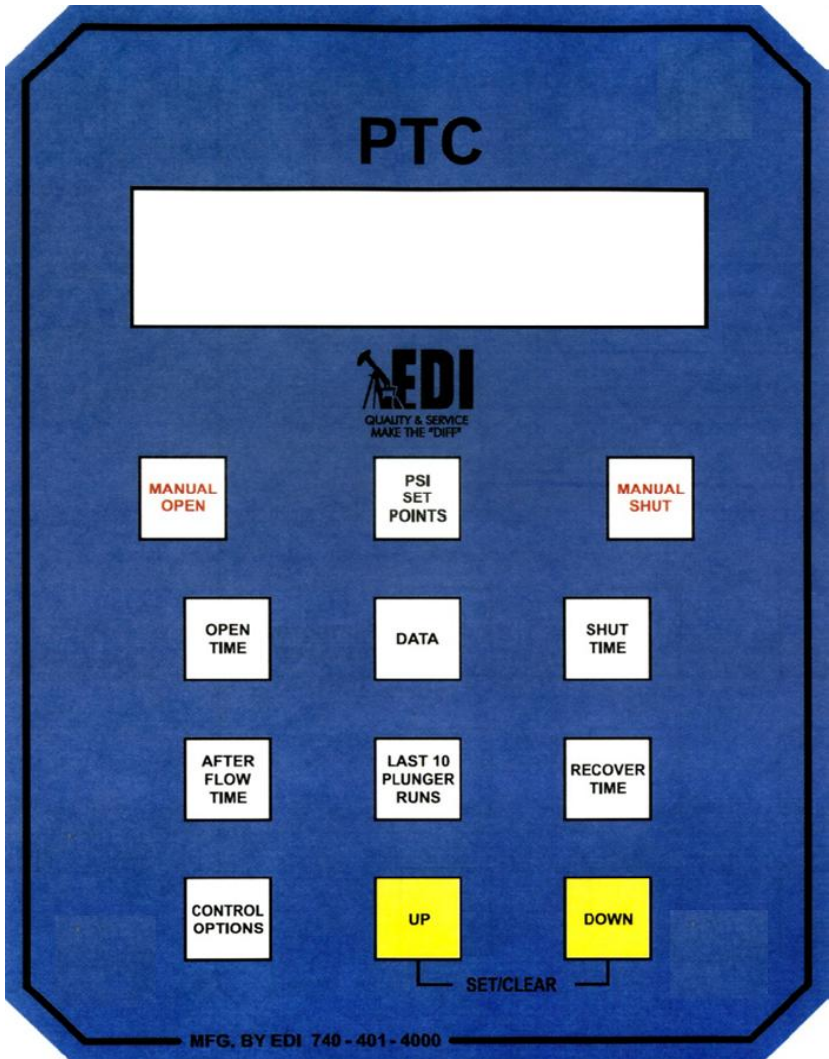


PTC Manual

Series 13B





QUALITY & SERVICE
MAKE THE "DIFF"

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DESCRIPTION

The EDI Pressure Time Controller (PTC) is a combination of a pressure sensing device and a basic on/off timer. The PTC is a reliable, operator friendly controller, that allows for customization by selecting up to six options. EDI has developed a quality timer combining it with switchgauge functions and delivered it in the PTC.

Note All characters written in **Blue** or **Red** are how the characters will appear on the LCD (Liquid Crystal Display) on the PTC controller. Characters in **Blue** will appear anytime the associated buttons are pressed. Characters in **Red** only appear when the appropriate option is turned on and the associated button is pressed. See Controller Options, page #9.

FRONT PANEL CONTROLS

TIME PERIOD BUTTONS:

There are four time period buttons. These buttons allow the operator to display or set time period data. Their designations and functions are as follows:

1. **“OPEN TIME”**:

Allows the operator to set/read the open time period.

2. **“SHUT TIME”**:

Allows the operator to set/read the shut time period.

3. **“AFTER FLOW TIME”**:

Allows the operator to set/read the after flow time period. The **“After Flow Time”** follows the **“Open Time”** after the plunger reaches surface. The **“After Flow Time”** allows additional open time after the plunger has reached surface.

4. “RECOVER TIME”:

Allows the operator to set/read the recovery time period.

The “**Recover Time**” follows the “**Open Time**” if the plunger fails to reach the surface. The “**Recover Time**” is additional shut time to allow for well recovery. “**Shut Time**” will follow “**Recover Time**” to complete the cycle.

When any one of the time period buttons are pressed and held, the “**Up**” or “**Down**” buttons may be used to alter the time period to any value.

If the keypad is unused for one minute, the unit will go to sleep, conserving power. Pressing any button will wake the display.

When holding in on the “**Up**” and “**Down**” buttons, changing time actions will speed up.

MANUAL VALVE CONTROL BUTTONS:

These buttons allow the operator to manually open and shut the valve.

If Option #2 reads [Normal Timing](#), pressing the “**Manual Open**” button will also start timing a new open time cycle and pressing the “**Manual Shut**” button will start a new shut time cycle.

If Option #2 reads [Sequential Time](#), a new open/shut time cycle will be started only if the “**Up**” or “**Down**” button is simultaneously pressed with the “**Manual Open/Shut**” buttons.

See Option #2 - Page 9.

LAST 10 PLUNGER RUNS BUTTON:

This button allows the operator to display the last 10 plunger travel times. Each time the button is pressed, the next plunger travel time will be displayed. The order they are displayed is as follows: #1(most current)-#2-#3-#4-#5-#6-#7-#8-#9-#10, then they repeat the same order. In the following description the characters shown in **Blue** are what the operator will see on the LCD display; X stands for the actual digits.

1. Plunger travel time #1 (most current).

Plunger Travel 1
Xd XXhr XXmn XXs

2. Plunger travel time #2

Plunger Travel 2
Xd XXhr XXmn XXs

3. Plunger travel time #3

Plunger Travel 3
Xd XXhr XXmn XXs

Plunger travel times #4 through #10 read same as above.

If **Plunger Travel Time #1** is viewed during a plunger run, the actual timing in progress may be observed.

Data Button

The “**Data**” button allows the operator to scroll through data each time the button is pressed. In the following description, the characters shown in **Blue** are what the operator will see on the LCD display.

The order in which data will be displayed is as follows:

- | | |
|---------------------------------|---|
| 1. Plunger arrival count | Plunger Arrivals
0000 |
| 2. Plunger failure count | Plunger Failures
0000 |
| 3. Total Open Time | Total Open Time
Xd XXhr XXmn |
| 4. Battery Voltage | Battery Voltage
0.00V |
| 5. Hi Count | Hi Count
00 |
| 6. Lo Count | Lo Count
00 |

To clear the plunger arrival count, plunger failure count, the total open time, hi count and lo count, the operator, while holding this button, can press the “**Up**” or “**Down**” buttons, and the displayed value will be cleared to zero.

NOTE: **Total Open Time** is displayed in days, hours, and minutes.

OPERATIONAL DESCRIPTION for EXTERNAL INPUTS

EXTERNAL INPUTS OVERRIDE PSI SET POINTS:

There are three external inputs available to the operator, “Open”, “Close”, and the “MSO” (magnetic shut off) input.

OPEN AND CLOSE INPUTS:

These inputs are referred to as the “Open” inputs and “Close” inputs. These inputs may be connected between “Open”, “Close”, and “Common”.

The inputs are labeled “Open”, “Close”, and “Common”. The “Open” input, when connected to the “Common” input, causes an open valve response. The “Close” input, when connected to the “Common” input, causes a close valve response.

When the “Open” inputs are closed the valve will open and the **“Open Time”** is loaded. The **“Open Time”** will start counting when the contacts open. The operator shall be warned of an “Open” condition. The operator will see **Open Time Hold Ext Open For** and the time displayed will tell the operator how long the “Open” contacts have been closed. When the “Open” contacts open, the time will start counting.

When the “Close” inputs are closed the valve will shut and the **“Shut Time”** will be loaded. The **“Shut Time”** will start counting when the contacts open. The operator shall be warned of a “Close” condition. The operator will see **Close Time Hold Ext Close Input For** and the time displayed will tell the operator how long the “Close” contacts have closed. When the “Close” contacts open, the time will start counting.

PSI Set Points Button

The “**PSI Set Points**” button allows the operator to view the actual pressure input and scroll through the pneumatic set points. The different set points are as follows:

Pressure 0000 (The actual input pressure. This is a read only function.)

Hi Pressure Set Point 0000

Lo Pressure Set Point 0000

Valve Delay XXmn XXs

Lo Shut In Set Point 00

Hi Shut In Set Point 00

When the actual pressure reaches the **Hi Pressure Set Point**, the **Valve Delay** time starts counting down. When the **Valve Delay** time times out the controller will react to the **Hi Pressure Set Point**, shutting and/or opening the valve. A count will be added to the **Hi Count** on the “**Data**” button.

When the actual pressure reaches the **Lo Pressure Set Point**, the **Valve Delay** time starts counting down. When the **Valve Delay** time times out the controller will react to the **Lo Pressure Set Point**, shutting and/or opening the valve. A count will be added to the **Lo Count** on the “**Data**” button.

The **Valve Delay** time starts counting when a **Hi** or **Lo Pressure Set Point** is reached. The controller will not react to the **Hi** or **Lo Pressure Set Point** until the **Valve Delay** time times out. This avoids pressure spikes from shutting and/or opening the valve.

The **Lo Shut In Set Point** counts the number of times the **Lo Pressure Set Point** is reached. When the **Lo Count** on the “**Data**” button matches the set point, the controller shuts the well in, placing itself in manual mode, until the operator corrects the problem. This set point only appears when Option #4 is turned on.

The **Hi Shut In Set Point** counts the number of times the **Hi Pressure Set Point** is reached. When the **Hi Count** on the **“Data”** button matches the set point, the controller shuts the well in, placing itself in manual mode, until the operator corrects the problem. This set point only appears when Option #4 is turned on.

To set a desired value, scroll through the **“PSI Set Points”** button. While reading a set point or the valve delay, press the **“Up”** or **“Down”** button until the desired set point is reached.

MAGNETIC SHUT OFF (MSO) INPUT:

The **“MSO”** inputs are labeled **“+”** and **“-”**. These inputs are designed to connect to the E.D.I. PS4 plunger sensor. Most dry contact inputs will work.

CONTROLLER OPTIONS:

The “**Control Options**” button allows the operator to read or set up to six options. To view the current option, press this button. Each time the button is pressed, the next option will be displayed.

Note All characters in **Red** and **Blue** are how the characters will appear on the LCD. Characters in **Blue** will appear anytime the associated buttons are pressed. Characters in **Red** only appear when the appropriate option is turned on and the associated button is pressed.

Option 1 normal (factory set) - IGNORE FALL TIME:

Normal timing continues.

Option 1 altered - USE FALL TIME:

Fall Time is available by pushing the “**Recover Time**” button twice. Keep the button pressed while setting the desired time.

Fall Time overrides external “Open” inputs, allowing the plunger to reach bottom.

Option 2 normal (factory set) - NORMAL TIMING:

Normal timing continues.

Option 2 altered - SEQUENTIAL TIMING:

The manual shut button, MSO or Close inputs will shut the valve while timing continues through the full cycle. This keeps the controller in sequence with “real” time, which allows all controllers operating into the same gas line to operate in a set sequence.

Option 3 normal (factory set) - USE PRESSURE:

Turns options 4 & 5 on. Allows PSI Set Points to function as set.

Option 3 altered - IGNORE PRESSURE:

Turns options 4 & 5 off. Ignores PSI Set Points.

LCD will read: *Option #4 N/A*

(N/A = Not Available)

Option 4 normal (factory set) - IGNORE SHUT IN

Normal timing continues.

Option 4 altered - USE SHUT IN

Activates a **Lo Shut In Set Point** and a **Hi Shut In Set Point** on the “**PSI Set Points**” button.

Allows the operator to set a **Lo Shut In Set Point**. Each time a **Lo Pressure Set Point** is reached, a count is added to the **Lo Count** on the “**Data**” button. When the **Lo Count** equals the **Lo Shut In Set Point**, the well will be shut in and the **Hold Close Timer** will appear on the LCD and will tell the operator how long the well has been shut in.

Allows the operator to set a **Hi Shut In Set Point**. Each time a **Hi Pressure Set Point** is reached, a count is added to the **Hi Count** on the “**Data**” button. When the **Hi Count** equals the **Hi Shut In Set Point**, the well will be shut in and the **Hold Close Timer** will appear on the LCD and will tell the operator how long the well has been shut in.

Option 5 normal (factory set) - HI/LO CLOSE:

Turns option 6 on. Allows the **Hi Pressure Set Point** to open a valve and the **Lo Pressure Set Point** to close a valve.

Option 5 altered - HI OPEN/LO CLOSE:

Turns option 6 off. Allows both the **Hi Pressure Set Point** and the **Lo Pressure Set Point** to close a valve.

LCD will read: *Option #6 N/A*

(N/A = Not Available)

Option 6 normal (factory set) - CONTINUOUS CYCLE:

Normal timing continues.

Option 6 altered - STOPPED CYCLE:

The cycle stops timing after **Shut Time**, until **Hi Pressure Set Point** is reached, this will restart the “**Open Time**” cycle. The “**Manual Open**” button will also restart the “**Open Time**” cycle. In the STOPPED CYCLE condition, the LCD will read **Hold Close Timer** on the LCD and the time displayed will tell the operator how long the well has been shut in (stopped).

OPTION TABLE

	Normal Factory Settings	Altered
1	Ignore Fall Time	Use Fall Time
2	Normal Timing	Sequential Timing
3	Use Pressure	Ignore Pressure
4	Ignore Shut In	Use Shut In
5	Hi Open/Lo Close	Hi/Lo Close
6	Continuous Cycle	Stopped Cycle

All options are factory set for normal operation. To alter an option, the operator, while holding this button, presses the “**Up**” or “**Down**” buttons and the option being viewed will be altered.

Note

Option 3 turns on Options 4 and 5.

Option 5 turns on Option 6.

If Option 4, 5 or 6 are not available, the options will read:

Option #4 N/A

Option #5 N/A

Option #6 N/A

ELECTRICAL INFORMATION:

POWER SUPPLY:

(1) 6-volt alkaline lantern battery, Eveready #529 recommended.

SOLAR PANEL:

The unit may be equipped with a rechargeable 6-volt battery instead of the 6-volt lantern battery. This battery is kept fully charged by a solar panel supplied with this option.

POWER CONSUMPTION:

Supply voltage	6.5 volts maximum.
Current drain	120 micro-amps average.
Power	780 micro-watts average.

BATTERY LIFE:

The 6-volt battery should last 18 to 36 months, depending on how often the front panel controls are used.

The unit shall continue to operate reliably, and shall warn the operator, in the event the battery supply fail. The LCD will read: [Low Battery](#).

TEMPERATURE RANGE:

The unit is designed to operate reliably from -30 degrees Celsius to +85 degrees Celsius, -22 degrees Fahrenheit to +185 degrees Fahrenheit.

SYSTEM ENCLOSURE:

- Non-Metallic
- Non-Corrosive
- Fiberglass Reinforced
- Approximately 7 ½ pounds
- Dimensions: 8x6x4 inches



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