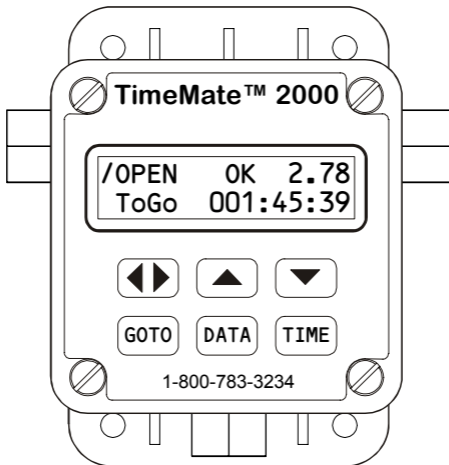


# “Set and Go” Options



## FramMate™ Software Programmable Options

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# LP Off Control

## Basic Option - 7

The LP Off Control shuts in to the CLOSE cycle when an external switch sensor connected to the LP input closes and shorts the LP input to ground (gnd). If the DELAY time option is active, the LP OFF Control is only active during DELAY timeout, otherwise the LP Off Control is active during the OPEN cycle timeout. The Flow Control option overrides and disables the LP Off Control.

# HP On Control

## Basic Option - 6

The HP On Control opens the well and initiates the OPEN cycle timeout when an external switch sensor connected to the HP input closes and shorts the HP input to ground (gnd). If the FALL time options is active and the user entered FALL time is non-zero, the HP On Control's trigger event is held until the FALL timeout is complete, otherwise the HP On Control immediately goes to the OPEN cycle upon an HP switch closure.

# LP Hold Control

## Basic Option - 4

The LP Hold Control prevents the controller from timing out the CLOSE cycle as long as an external switch sensor connected to the LP input remains closed, shorting the LP input to ground (gnd). When in the CLOSE cycle, the CLOSE time will timeout to one (1) second and hold until the switch connected to the LP input opens and releases the hold. When the hold is released, the controller will timeout the last CLOSE cycle second and go to the OPEN cycle.

The LP Hold Control may be used in conjunction with the LP Off Control to perform a dual shut-in and hold function. The Flow Control option overrides and disables both the LP Hold and LP Off controls.

The LP Hold control is one of the most useful and versatile controller functions. Switch sensors that may be used include sales line pressure or flow, fluid tank level, separator temperature, and Open or Close cycle synchronization with other controllers.

# Plunger PopUp

## Software Option - 7

The plunger “PopUp” option allows recovery of a plunger stalled in an oversized master valve. The user entered PopUp time tells the controller how long to wait for a plunger arrival after the start of the OPEN cycle. PopUp assumes the plunger is stalled in the master valve if no plunger arrival is sensed by the end of the PopUp time.

To recover the stalled plunger, PopUp will close the well to let the plunger drop out of the master valve. PopUp then re-opens the well to allow the plunger to clear the master valve and reach the lubricator for sensing the plunger arrival. After closing and then re-opening the well, PopUp will wait 60 seconds for a plunger arrival, if plunger arrival is not sensed, the process is repeated until either the plunger arrival is sensed or the OPEN time elapses.

PopUp is only active during the OPEN cycle and is deactivated during the DELAY cycle.

# Min Plunger Hold

## Basic Option - 5

The Min Plunger Hold option is used to detect situations where the plunger may not be falling to the well bottom and traveling up the well without a fluid load. This could lead to very high plunger travel speed and damage to both the plunger and the well's surface equipment.

If a plunger arrival time is less than the user entered PLUNGER min time, the controller will shut in the well and stay shut in until the GoTo key is pressed to reset the alarm condition.

# CLOSE Plunger Sense

## Advanced Option - 1

The CLOSE Plunger Sense option extends the plunger sensing time interval from the start of the OPEN cycle to the end of the following CLOSE cycle. The DELAY time cycle is only activated by a plunger arrival during the OPEN cycle timeout.

# Flow Control

## Software Option - 5

The Flow Control option uses a dp (differential pressure) switch to control the duration and timeout of the DELAY cycle. The dp switch connected to the LP input senses a differential across an orifice plate in the gas flow line. The dp switch is configured for a closed contact at or above the switch's High flow set point.

The afterflow or DELAY time is held fixed (no timemeout) until a Low flow (open switch) signal is sensed from the dp switch. As long as the Low flow signal persists, the DELAY cycle times out. If the gas flow increases above the High flow set point before the DELAY cycle times out, the Flow Control feature will reset and hold the DELAY cycle timeout, otherwise the DELAY cycle will timeout and terminate the flow cycle.

The Flow Control option also includes optional entry of minimum (DELAY min) and maximum (DELAY max) flow times. A zero time for the min or max disables the respective time limit.

# Synchronization

## Standard Feature

The external Synchronization feature provides a logic output (syn) to allow signaling another well head controller or automation equipment when the OPEN timing cycle begins.

OPEN cycle synchronization is a standard feature and does not need to be activated. To simulate a switch closure, the logic signal is at a normally High (+5 Vdc) level during the inactive state (CLOSE cycle) and transitions to a Low (0 Vdc) active level at the beginning of the OPEN cycle.

## Sync CLOSE Option

### Advanced Option - 4

The Sync CLOSE option modifies the standard OPEN cycle synchronization to operate with the CLOSE cycle instead. This allows signaling another well head controller or automation equipment with the CLOSE timing cycle begins.

# FramMate™ Software

The FramMate PC software allows users to view and modify the controller's programmed Set and Go options. This feature allows the controller to be custom tailored to meet a wide range of user applications without having to purchase several, fixed program controllers.

All Set and Go options, and more, are available to users with the FramMate software installed on a PC or laptop computer. The FramMate PC software interfaces to the well head controller through the controller's 5-pin serial port header and the standard 9-pin serial com: port on the PC or laptop computer.

The FramMate PC software is shipped on a CD ROM disk and is compatible with all MS Windows™ operating systems. A serial port interface cable is also provided that is powered by the controller. With FramMate, select only the needed features so each controller stays simple and easy to use.