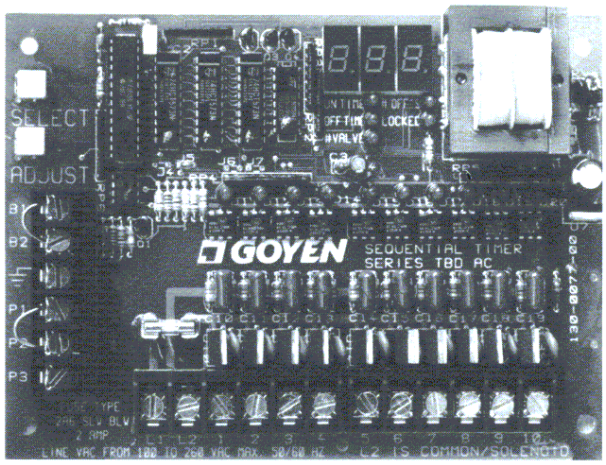
GOYEN

SEQUENTIAL TIMER MODEL TBD WITH AUTOMATIC BLOWDOWN

4, 6, 8 &10 STATION OUTPUTS

INSTALLATION AND OPERATING INSTRUCTIONS

GENERAL DESCRIPTION: The Goyen TBD Digital Timer is designed to control the pulse valve on reverse jet dust collectors. It provides timed sequential energization of the pilot solenoid valves. The number of outputs are programmable from 1 to 10 depending on the model selected. LED indicators are provided for visual indication of which valve is energized. A digital three position LED readout is provided to indicate the programmed settings of the various functions. Digital controls allow adjustment of the "on" and "off" time, the total number of outputs to be energized and the number of blowdown cycles required. Timer is equipped with integral surge suppression on power input and solenoid load outputs to protect against voltage spikes. The Timer will retain all programmed settings if input power is removed for any reason.



Provision is made for **Pressure Switch Control.** This provision allows the timer to operate only when the pressure switch contacts are closed. A memory feature causes the timer to energize the next output in sequence when pressure switch calls for timer to restart. Normally when electrical power is disconnected from the timer, and later re-established, the timer will start at output No. 1. A jumper is provided to allow continuous operation of the timer when pressure switch is not used.

Automatic Blowdown: This feature allows the timer to continue to operate for a programmed number of complete cycles after the baghouse fan is turned off. The blowdown cycle is initiated by the opening of the auxiliary contact on the fan motor starter when the fan is stopped. The number of blowdown cycles is programmable from 0 to 25. **Caution:** Do not over-clean the filters. When the programmed number of cycles is completed, the timer turns itself off. The timer will automatically start when the baghouse fan is restarted if the blowdown feature is connected. A jumper is provided to allow the timer to operate if the blowdown feature is not used.

SPECIFICATIONS:

MODEL NUMBER	TBDAC-				TBDDC-			
	04	06	08	10	04	06	08	10
Number of outputs	1 – 4	1 – 6	1 – 8	1 – 10	1 – 4	1 – 6	1 – 8	1 – 10
Line voltage	100 to 260 VAC 50/60 Hz				12 to 24 VDC			
Load output rating	2 AMPS							
Circuit protection	2 AMP Fuse 2 AG Slow Blow							
Operating Temperature range	–40° to +140° F							
Timing range	ON-TIME 30 to 350 milliseconds in 5 milliseconds steps				OFF-TIME 1 to 180 seconds in 1second steps			
Timing accuracy	± 0.5% of set point							
On demand control	External Pressure Switch with Memory							
Load output indicators	Red Light Emitting Diodes							
Programmed setting indicator	Three Position LED Digital Display							
Number of blowdown cycles	0 to 25							
Timer Board	6 ¾" x 5" Glass Epoxy with RTV Conformal Insulation.							
Board Mounting	Direct mounting or snap-in "U" channels (See installation instructions)							
Enclosure	Minimum 8" x 6" x 3½" NEMA-4 (Optional)							
Approvals	UL Listed and CSA Certified							

INSTALLATION

* If an 8" x 6" x 3 1/2" NEMA-4 enclosure is used, the timer board can be mounted direct to the enclosure studs. Before mounting the timer board, place the (4) round spacer washers (provided) over the enclosure mounting studs and install the white snap-in mounting stud (provided) in the hole on the board located at the center of the lower terminal strip, then secure the board in place with (4) 10-32 screws. The spacer washers prevent the board from cracking when mounting screws are tightened and the snap-in stud provides stability when wires are connected to the terminal block, see Fig. #1. Alternately, the board can be mounted on a base plate using (2) snap-in "U" channels (optional), see Fig. #2.
* Connect Line Input Power, AC voltage to terminals marked L1 (Active Line) & L2 (Neutral Line). DC voltage to terminals marked Negative - (Neutral Line) & Positive + (Active Line). Note line voltage must match coil voltage.
* Connect output terminals to pilot valve solenoid coils. Connect common side of coils to L2 (Neutral Line) on AC voltage. Connect common side of coils to Positive + (Active Line) on DC voltage.
* Pressure Switch: If pressure switch is used, disconnect jumper between terminals P1 & P2 and connect to pressure switch. Pressure switch is to close contacts on high pressure setting.
* Blowdown: If blowdown feature is used, disconnect jumper between terminals B1 & B2 and connect to the auxiliary contacts on the fan motor starter. Contacts are to open when fan is stopped.
* Ground: Connect ground terminal to ground.
* Establish power to board and adjust "ON" time, "OFF" time, number of outputs used and number of blowdown cycles required. See programming instructions for details.

PROGRAMMING INSTRUCTIONS

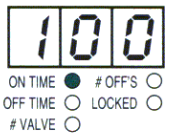
Press the "Select" button to illuminate the LED indicator adjacent to the function required, then press the "Adjust" button to the required setting which will be displayed on the Digital Readout. After all functions have been set, push the "Select" button to the Locked LED indicator. In the locked position, the Digital Readout will display the last setting, which is the number of blowdown cycles programmed.

To check a specific function setting, push the "Select" button to illuminate the desired function LED, the setting is then shown on the Digital Readout.

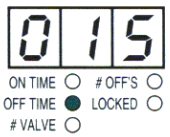
* The ON TIME setting is adjustable from 30 to 350 milliseconds in 5 millisecond increments.
* The OFF TIME setting is adjustable from 1 to 180 seconds in 1 second increments.
* The NUMBER OF VALVES CONNECTED setting is adjustable from 1 through the total number of outputs available on the Timer Board.
* The NUMBER OF BLOWDOWN CYCLES setting is adjustable from 0 to 25 cycles.

PROGRAMMING EXAMPLE

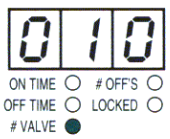
STEP #1 – ON TIME – Press the "Select" button until the "ON TIME" LED indicator is illuminated, then press the "Adjust" button until the required ON TIME in milliseconds is shown on the Digital Readout. (100 milliseconds illustrated).



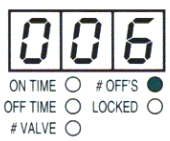
STEP #2 – OFF TIME – Press the "Select" button until the "OFF TIME" LED indicator is illuminated, then press the "Adjust" button until the required OFF TIME in seconds is shown on the Digital Readout. (15 seconds illustrated).



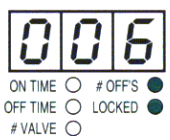
STEP #3 – NUMBER OF VALVES CONNECTED – Press the "Select" button until the "# VALVE" LED indicator is illuminated, then press the "Adjust" button until the required NUMBER OF VALVES CONNECTED is shown on the Digital Readout. (10 valves illustrated).



STEP #4 – BLOWDOWN CYCLES – Press the "Select" button until the "# OFF'S" LED indicator is illuminated, then press the "Adjust" button until the required number of BLOWDOWN CYCLES is shown on the Digital Readout. (6 cycles illustrated). **Caution:** Do not over-clean the filters.

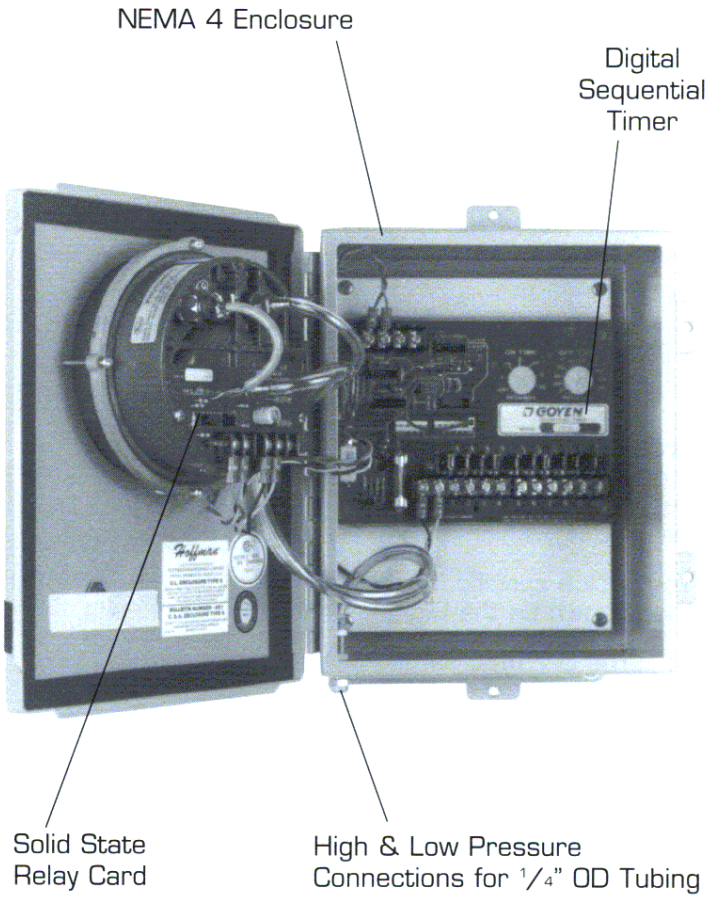


STEP #5 – SETTINGS LOCKED – Press the "Select" button until the "LOCKED" LED indicator is illuminated. All settings are now locked in and the Digital Readout will display the last setting, which is the number of blowdown cycles programmed (6 cycles illustrated). The "#OFF'S LED" indicator will also stay illuminated.



In addition to our 4, 6, 8, & 10 Station Digital Timers, Goyen offers 16, 24, 32, 40 & 48 Station Digital Timers with the same features. Data Sheet available on request.

We also offer a Differential Pressure Controller that provides a means for "Demand Cleaning", which is illustrated below:



The Controller causes the Sequential Timer to start when the differential pressure through the Dust Collector reaches the gauge high set point and to stop when the pressure drops to the low set point.

For additional information regarding these products please contact us at 1-800-538-8121 (Outside California).

Fig. 1

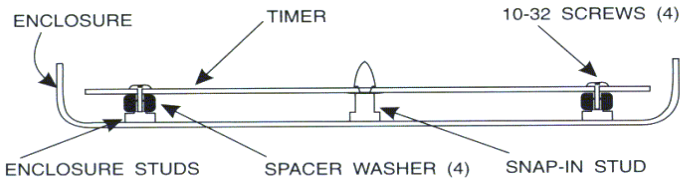
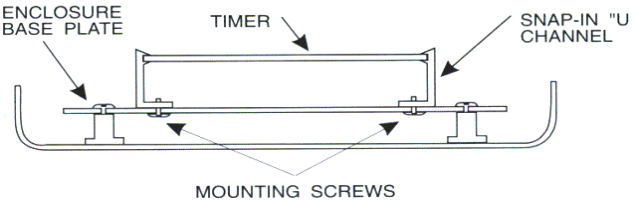


Fig. 2



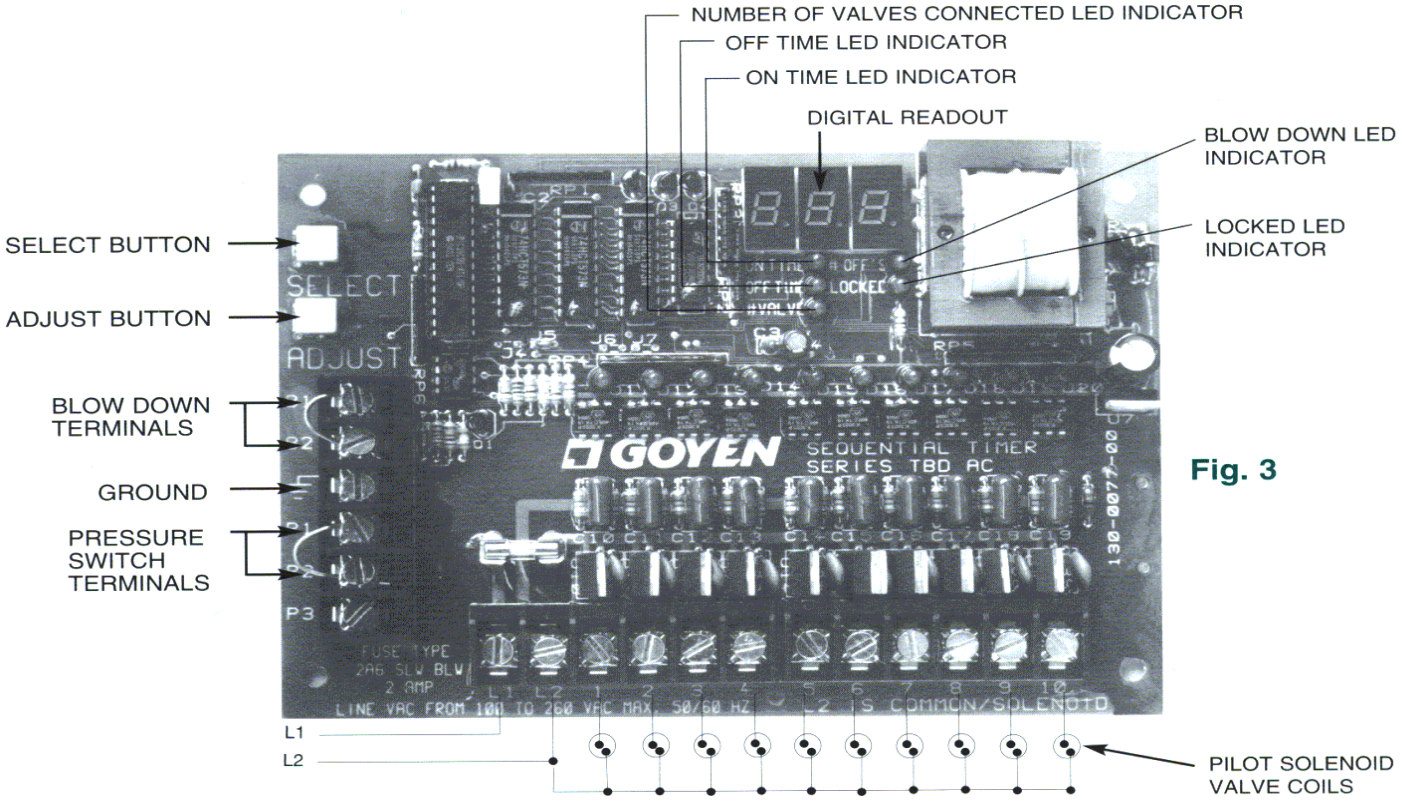
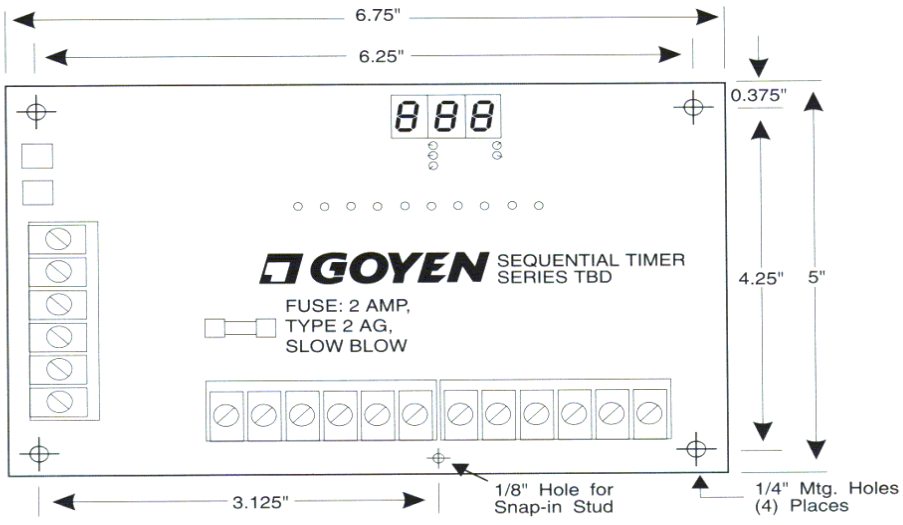


Fig. 3

MOUNTING DIMENSIONS



NOTE: Maximum Height is 1 7/16"