1. Introduction

Thank you for purchasing a Nutech 2701 sampling timer. Please read this manual carefully before using this product.

The Nutech 2701 is designed for integrated air sampling.

2. Operation Keys

1. **USB** —— USB Port

2. **Digital keys**

3. **Right arrow**

4. **Left arrow**

5. **Start Auto mode**
3. Display Window

There are three function display areas: Power Status, Clock Setting, and Timer Operation.
Symbols and Functions

A. Power Status

USB function

USB communication

Battery indicator, charging or charge level

Battery needs to be charged, Empty

LOGO

Auto Operation

Manual Start and Stop

B. Clock Setting

Days of the Week: Sunday to Saturday

Selected Day

Clock: 24 hours mode, military time

C. Timer Set Operation

Event Indicator

Event Number (max. 12 timed events)

Auto Sampling Started

Valve Open

Valve Closed

Sampling Time Length Indicator

Indicates Sampling Started

Indicates Sampling Stopped
4. Battery Check – Prior to Use

Confirm the battery display, is fully charged. If the battery display appears to have zero or one bar, please charge the battery using the supplied USB adaptor before use. If the battery shows zero bars, complete charging may take up to 12 hours.

5. Operation

A. Initial Setup

Open the Nutech 2701. The timer is in “sleep” mode, and there will be no LCD display. Press the [Enter] key once to turn on the display panel. If there is no further key operations within 60 seconds, the timer will return back to sleep mode automatically to save on battery life.

NOTE: If there is no display after pressing [Enter], the battery is depleted and needs to be charged. Please refer to the Battery Check section before proceeding.

B. Time Setting

Push [Set] key twice to enter the time setting mode. The LCD will start flashing. Using the digital keys set the clock (military time). If necessary, the left or right arrow keys can be used to make a correction. Once the minutes are typed in, the day of the week will start flashing. Using the left or right arrow key, move the cursor to the desired day. Press the [Enter] key to complete the time and day settings.

C. Auto Operation

1. Setting Start Time (OPEN)

Press [Enter] to wake the unit, and press [Set] to begin setting the event. Set event number (SEG) using the digital keys. Select 1 to 12 as your event number. Once you set the event number, the Open will start flashing for you to set the valve function. Push [Enter] to confirm this function. The time will start flashing indicating that it is ready. Using the digital keys, enter the sampling start time. Use the right and left arrow keys to select the desired day, followed by [Enter] to finish the sampling start time. The display will return back to the clock setting.
2. Setting Stop Time (CLOSED)

Press [Set] to begin setting the event. Set event number (SEG) using the
digital keys. Select 1 to 12 as your event number. Once you set the event
number, the Open will start flashing for you to set the valve function. Use the
left or right arrow key to switch to Closed position. Push [Enter] to confirm
this function. The time will start flashing indicating that it is ready. Using the
digital keys, enter the sampling stop time. Use the right and left arrow keys to
select the desired day, followed by [Enter] to finish the sampling stop time.
The display will return back to the clock setting.

Repeat steps 1 and 2 for all other sampling events. Up to 12 sampling events
can be programmed.

3. Event Setting Check

You may check your event setting any time before the event starts. Push [Enter]
to power up the timer. Push [Set] and enter the SEG number you wish to check.
Press the right arrow to toggle between the open and closed settings, and press
[Enter]. Press [Enter] to see the set time, and press [Enter] again to see the
day of the event. If there is no change, press [Enter] to exit out of this setting.

4. Event Setting Erase

For the events you do not need, simply enter 00:00 number for both Open and
Closed time.

5. Operation Example

Example: You need to set two timed events for Monday sampling. The first
sampling event starts at 9:00am and stops at 10:00am. The second sampling
event starts at 10:30am and stops at 11:30am:

- Press [Enter] to wake the unit.
- Press [Set] once to enter event setting SEG.
- Enter 01 for the first event. Open is flashing.
- Press [Enter]. Time is flashing.
- Enter 09:00. Day of the week arrow is flashing.
- Use the left or right arrow keys to select M for Monday.
- Press [Enter]. The event start is now complete
- Press [Set] again to select SEG 01.
- Press right or left arrow key. Closed is flashing.
- Press [Enter]. Time is flashing.
- Enter 10:00. Day of the week arrow is flashing.
- Use the left or right arrow keys to select M for Monday.
- Press [Enter]. The event stop is now complete.

Repeat this for your second event setting, using 02 for the 2nd (SEG) event and 1030 and 1130 for the start and stop times.

6. Start or Stop the Auto Sampling

After you have finished entering the event settings, press the (Auto) key to start the AUTO operation. The word “Activated” will be displayed in the lower left hand corner of the display panel. Once an event sampling has started and the valve is in open position (sampling in processing), the (Auto) will be locked until the event is completed and the valve is closed.

NOTE: You can stop the sampling by pressing (Auto) button again. The timer will stop and (Activated) display will no longer be displayed.

NOTE: You cannot set more timed events once the first timed event is running. If you do so it will result in both events not working properly.

D. Manual Control

1. Open Valve

Press the [Manu] button to enter manual mode. The Open or Closed on LCD will indicate the valve status. If the valve status is Closed push [Manu] key and it will toggle back to Open status. When valve is Open, the canister picture will show “sampling in” and the timer next to the canister will show the sampled time.

2. Closed Valve

If the valve status is Open, push [Manu] key and it will close the valve. LCD will display Manual mode. In Closed position, there will be no indications of “sampling in” flashing lines into the canister and the timer will not be active.

3. Valve Function Check

It is recommended to push the [Manu] key several times to toggle between Open and Closed before programming to make sure the valve function is operating correctly.
6. Specifications

1. Function

Automatic time sampling
12 time events: Sampling time 1 minute to 168 hours
Auto or Manual operation
4X4 key
LCD displays time, event, logo, mode, battery status, & etc.
Battery may continuously be used for a month with one full charge.

2. Electronics

Power:
  Board: +3.6V, +/-5% ,
  LCD: +3.6V, +/-5%
  Valve: +9V, +/-5%
  Battery capacity: 1000mAH Ni ion
USB: Voltage: +5 V

Solenoid valve:
  Voltage: +9V
  Coil R: 9R +/-5%
  Pulse: 30ms +/-15%
  Media temperature: -20~80℃
  Life time: 150000 Times on/off time
  Pressure: -0.1~+0.8MPa
  Working condition: -20~80℃

3. Sampling connection

Sampling in: 1/4” Swagelok union
Sampling out: 1/4” Swagelok tube

Nutech 2701 size:
  150 X 100 X 70 mm. Weight: 600 g