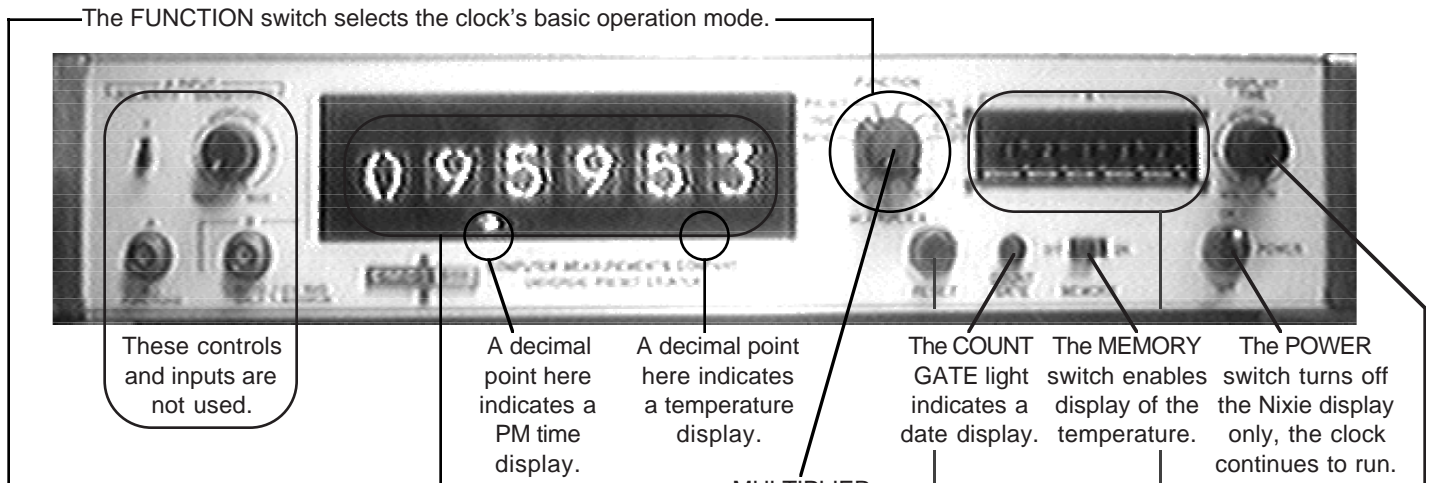


Converted Nixie Clock 6a

<http://pobox.com/~JasonHarper/Nixie6a.html>

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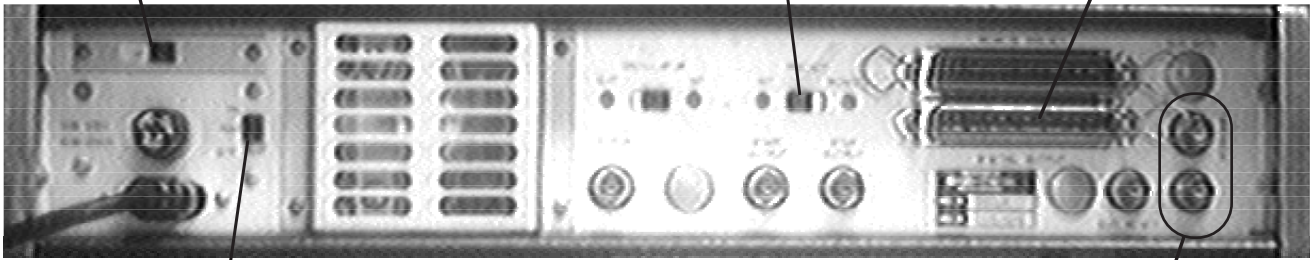


FUNCTION	Nixie display			MULTIPLIER switch	RESET button	Thumbwheel switches	DISPLAY TIME
RATIO (24-hour time) TIME (12-hour time)	HOURS	MINUTES	SECONDS		Manually switches between time, date, and optionally temperature displays.		Sets rate of automatic display advance. In "∞" position, display only advances manually.
	MONTH	DAY	YEAR	1			
	DAY	MONTH	YEAR	10			
	YEAR	MONTH	DAY	100			
PRESET (time setting mode)	The display will read "777777" if time setting has been disabled by the PRESET switch on the back panel, "888888" if the leftmost thumbwheel switch is not set to a valid value (1-5), "999999" if the other thumbwheel switches are not set to a valid time or date. Otherwise, the current time or date (whichever is about to be set) is displayed.				Sets time or date as entered via thumbwheel switches.	1 HOURS unused	
	Time is always set in 24-hour format. Setting the minutes (options 2 or 3) will also set the seconds to zero at the moment RESET is pressed. Date is always set as month/day, regardless of the selected date format.					2 unused MINUTES	
RATE (random number modes)	Displays pseudo-random numbers, in one of four styles - scroll right, scroll left, change one digit at a time, change all digits.				Switches between the four styles.		Sets rate of display change.
COUNT ON (Nixie & light test mode)	The ones digit of the seconds is displayed on all Nixies. The two decimal points are lighted alternately each second. The COUNT GATE light is on during odd seconds.						
COUNT OFF (thumbwheel switch test mode)	Displays the current setting of the thumbwheel switches, to verify that they are being read correctly.				Advances leftmost digit of display.	Sets number displayed on rightmost 5 digits.	
Alarm feature (available in all modes)	The alarm will sound when the current time matches the time entered on the thumbwheel switches (always interpreted in 24-hour format), and will continue sounding for 1 hour. The RESET button will silence the alarm for 5 minutes, in addition to whatever it normally does in the current display mode. Additional presses of the RESET button increase the duration of silence. Pressing RESET four times in a row will completely silence the alarm for today, while leaving it still active for tomorrow.					9 HOURS MINUTES	The alarm is disabled if the left thumbwheel switch is set to anything but 9.

The 115/230 power input switch presumably still works (I haven't tested it). However, please note that the clock requires 60 Hertz AC for correct timing: I believe that all countries that use 230V AC also use 50 Hz, which would make the clock run 17% slow.

The PRESET switch must be set to the INT position to be able to set the time. Setting it to REMOTE might be useful if the clock is in a location where people are likely to play with the front panel controls.

The DIGITAL OUTPUT connector is still connected internally. In the unlikely event that you can find a compatible remote display unit, it should be usable, although I cannot guarantee this.



This switch can be used to turn off the fan. The original owner's manual only requires that the fan be used if the ambient temperature may reach 50°C (122°F), however I strongly suggest running it even at cooler temperatures, to help prolong the life of the clock's electronics.

All other connectors and switches on the back panel are non-functional.

The A/B input connectors are still connected to the corresponding front panel inputs, and could be used to pass signals through the clock. Please note that the shields are grounded internally.

NOTES ON THE TEMPERATURE DISPLAY FEATURE:

The temperature sensor is rated for use between -55 and 150°C, however that is probably a greater range than the rest of the clock (not to mention the clock's user) can survive. Also, the fixed number of Nixie digits and lack of any way to display a minus sign place further limits on the temperatures that can be displayed. Anything over 99°C or 255°F will display incorrectly, although those limits are unlikely to be reached. Temperatures below freezing will also display incorrectly in both °C and °F.

The sensor has a resolution of 1/16°C, and a rated accuracy of $\pm 1.5^\circ\text{C}$ over the temperatures at which the clock is likely to be used ($\pm 3^\circ\text{C}$ over the full temperature range). However, this accuracy doesn't do you much good, as the sensor is buried too deeply within the clock for the outside air temperature to affect it much. The temperature display will be most useful if the fan is run continuously, although even then it will read somewhat higher than the ambient temperature.

MAINTENANCE:

If the cooling fan is used, page 3-0 of the manual recommends that it be oiled at approximately 6 month intervals (an easy way to remember would be to oil it whenever you adjust the clock for Daylight Savings Time). To do this: Unplug the clock. Remove the top cover. Stand the clock on its side, so that the DISPLAY TIME knob is down. The fan motor's oiling holes will now be facing upwards, although they're still a bit awkward to reach.

The power supply adjustments described on manual page 3-2 are still valid, although they should not be needed anytime soon.

The amplifier and oscillator adjustments described in the manual are no longer meaningful, as the circuitry they refer to no longer exists.

The Nixie tubes are Amperex ZM1030 or ZM1032. The clock currently has 1032's installed: the difference between the two types is that 1030's have a red coating for better contrast, however that's not too important since there's a colored filter in front of the tubes. There would probably be a noticeable difference in brightness if the two tube types were mixed, but due to the rarity of these tubes you may have a hard time finding six matching ones. To replace the Nixies: Unplug the clock. Remove the top cover. Loosen the two thumbscrews directly behind the display, and the cover over the display assembly can be lifted out.